

COAST ARTILLERY JOURNAL

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The Army Mutual Aid Association



THE ARMY MUTUAL AID ASSOCIATION was born of necessity. In times gone by insurance companies considered Army Officers poor risks and refused to insure them or else charged them extra premiums. American Army Officers, seeing the need of immediate help for their families in emergency, instituted this life insurance concern in 1879. Among its charter members were Generals Philip H. Sheridan, R. C. Drum, G. W. Davis, Arthur McArthur, W. R. Shafter, S. B. M. Young, and Emory Upton. The undertaking being largely a matter of experiment, an assessment plan comparable to *Term Insurance* was adopted and remained in effect until 1897, when the Association, having proven its worth, was reorganized as an *Ordinary Life* institution, with insurance on the *Whole Life* plan.

For over half a century, this organization constituted and directed by its Army Officer membership, has provided Army Officers with life insurance at rates averaging lower than those of reputable commercial companies, has consistently made immediate payments of benefits, one-half being transmitted by wire and one-half by mail. This plan of insurance is the best type for salaried men and permits *paid-up insurance* or cash *surrender* privileges in case of retirement or separation from the Army. There has never been serious criticism of the management of the institution, its accounts or investments, and its strongest advocates are its members and the widows it has helped. It has never been in financial difficulty in spite of money panics, epidemics and wars. Those insured are select risks of varied age, rank and duty in the Army.

Investments have been made in conservative and safe securities so that the Reserve has had a gradual and steady growth. Securities are purchased only upon the advice of professional investment counsel. The Experience Table shows the growth of membership to have been gradual, consistent and healthy, and that the increase in members has conformed closely to the increase in the Army since the inception of the institution. Its mortality rate has averaged low. The age of its members has held comparatively young and its reserve has always been more than sufficient to meet instantly all benefits due.

An outstanding feature of the Association's work is its help in preparing the pension and other claims for the bereaved parents, widows and families of its members. This service, built up through years of experience, assures the relatives of members that their rights as to Government allowances will be protected. The importance of this service may be appreciated by the fact that families of officers who were not members of the Association are known to have lost thousands of dollars because they failed to file timely claims and proper supporting evidence for pensions and other Government allowances.

Every eligible Coast Artillery Officer should become a member and support the work of this Association, first, as a matter of good business; second, as a matter of *esprit de corps*.

THE COAST ARTILLERY JOURNAL

Member Affiliated Military Magazines

Published as the Journal U. S. Artillery from 1892 to 1922

MAJ. STEWART S. GIFFIN, C. A. C., Editor

EDWIN H. CROUCH, Business Manager

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from front of volume.

Pages missing here were advertisements and have been removed so that the volume will not be too bulky.

THE UNITED STATES COAST ARTILLERY ASSOCIATION



"The purpose of the Association shall be to promote the efficiency of the Coast Artillery Corps by maintaining its standards and traditions, by disseminating professional knowledge, by inspiring greater effort towards the improvement of materiel and methods of training, and by fostering mutual understanding, respect and cooperation among all arms, branches and components of the Regular Army, National Guard, Organized Reserve and Reserve Officers' Training Corps."



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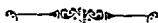
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MEMBERSHIP

"The Association shall consist of Active, Associate, and Honorary Members.

"The following shall be eligible for Active membership:

- a. Commissioned officers, active or retired, of the Coast Artillery of the Army of the United States.
- b. Commissioned officers, active or retired, of the Staff Corps and Departments of the Army of the United States who at any time have served in the Coast Artillery.
- c. Commissioned officers, active and retired, of the Philippine Scouts who have served in the Coast Artillery.
- d. Former commissioned officers of Coast Artillery of honorable records in the Army of the United States.
- e. General officers, active or retired, of the Army of the United States.

The following shall be eligible for Associate membership:

- a. Commissioned officers and former commissioned officers in good standing of the United States Army, Navy, Marine Corps, Coast Guard and Public Health Service.
- b. Warrant officers and non-commissioned officers of the Coast Artillery of the Army of the United States.
- c. Members of the Coast Artillery Units of the Reserve Officers' Training Corps and Citizens' Military Training Camps.

The following shall be eligible for Honorary membership:

- a. Civilians who have demonstrated their interest in national military preparedness.
- b. Persons who have rendered distinguished services to the Association or to the United States."



GENERAL DOUGLAS MacARTHUR

WAR DEPARTMENT
OFFICE OF THE CHIEF OF COAST ARTILLERY
WASHINGTON

WITH the beginning of a new year, the COAST ARTILLERY JOURNAL appears in a new dress, with a modern format and under the direction of the Coast Artillery Association.

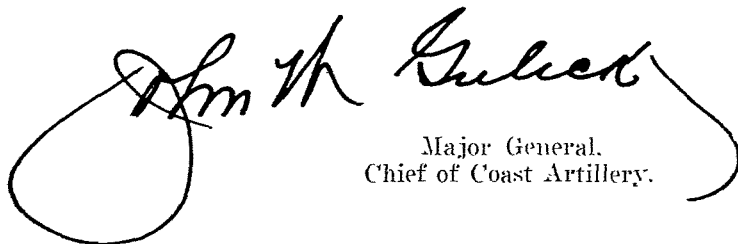
I believe that these changes mark the beginning of the most important period of usefulness during the long life of the Journal. It is appropriate that these changes be made now, for the Coast Artillery is entering upon a new period of development with a broad and varied mission and all ranks are looking forward to the future with enthusiasm and confidence.

The purpose of the Coast Artillery Association is to foster the best traditions of the Coast Artillery and to promote its development and efficiency. The COAST ARTILLERY JOURNAL becomes the organ of the Association with a similar purpose and mission. This will be accomplished by the publication of timely professional articles with the object of stimulating interest in and discussion of our primary problems. I hope to see its field of usefulness expanded to meet new conditions and to its becoming in fact an open forum for Coast Artillery discussions. Special departments will present news and information of interest to the personnel of the Coast Artillery of all components of our Army. All of these will be presented in an attractive and up-to-date manner.

The changes in dress and format were decided upon after the most serious consideration and upon the recommendation of the Committee which has so ably directed the policy of the Journal during the past six months. The size adopted is almost uniform among progressive monthly magazines of nation wide circulation. It lends itself better to the use of illustrations and the technical requirements of good printing practices. These changes, it is believed, will be agreeable to the readers of the Journal. Other considerations connected with advertising influenced the decision to change this to a size more in accordance with modern advertising demands.

Reacting to the demand of readers for more general articles, particularly those connected with the other arms, the COAST ARTILLERY JOURNAL will contain many nontechnical articles calculated to foster a better understanding of the missions and problems of the other combat arms.

In addition to the professional and other information to be found in its pages the Journal will present views of the Association. Therefore every member of the Association should be a subscriber to and a reader of the Journal. It should also be kept in mind that the Association has no dues and no assessments and that funds to cover necessary expenses will be derived from subscriptions, to the Journal. A large subscription list means more income and reduced publication costs. Let all members indicate their support and cooperation by subscribing. If we do this success is assured.


Major General.
Chief of Coast Artillery.

The United States Coast Artillery Association

IN ACCORDANCE with the notice previously sent to all applicants for membership, the first meeting of the Coast Artillery Association was held at the Racquet Club in Washington, D. C., at eight o'clock on the evening of January 10, 1931.

Colonel S. C. Vestal, the Chairman of the Constitution Committee, called the meeting to order and reviewed, briefly, the procedure which was followed in organizing the Association.

The committee was appointed by the Chief of Coast Artillery as a result of correspondence with a number of representative officers who were unanimously in favor of forming an Association devoted to the interests of the Coast Artillery Corps. This committee examined the constitutions of other service associations and also considered the helpful suggestions made by many officers who were interested. The constitution which the committee drafted was submitted to all officers and former officers of all components of the Coast Artillery. The constitution has met with the written approval of twenty-three hundred and thirty-eight eligible applicants who have become charter members of the Coast Artillery Association. This number greatly exceeded the minimum required by the constitution as necessary to organizations.

Colonel Vestal called attention to two important particulars in which the Constitution of the Coast Artillery Association differs from those originally adopted by other associations. The first concerns eligibility. In the Coast Artillery Association the members from all components are accepted on an equal basis of membership. The Coast Artillery Association desires the interest and participation in its affairs of all officers, whether of the Regular Army, National Guard or Reserve. Any restrictions placed on any of its active members would not have been consistent with the expressed purpose of the Association or in keeping with the spirit of cooperation which is essential in an organization of this kind.

The Coast Artillery Association differs in another particular in that no dues or assessments are required from its members. This was so decided in order that the sincere purpose of the Association might be more apparent and to remove suspicion that the Association is to be operated as a commercial organization. While it is true that the COAST ARTILLERY JOURNAL is the official organ of the Association, there is no requirement limiting the membership of the Association to those who are subscribers to the JOURNAL.

In order that the Association might be prepared to operate immediately upon organization the committee was constituted as a nominating committee to select the names of officers to serve as members of the Executive Council of the Association when formed. It also set

the date of the first meeting. These nominations were submitted to those applying for membership. The result of the balloting was almost unanimously in favor of the candidates selected by the committee.

Colonel Vestal then announced the election of the following named members of the Executive Council:

PRESIDENT (For two years)

MAJOR GENERAL JOHN W. GULICK

Chief of Coast Artillery

VICE-PRESIDENT (For one year)

COLONEL JOSEPH P. TRACY, C. A. C.

MEMBERS OF THE COUNCIL (For two years)

BRIGADIER GENERAL HOWARD S. BORDEN, O. R. C.

COLONEL BOWMAN ELDER, C. A.-Res.

MAJOR STEWART S. GIFFIN, C. A. C.

CAPTAIN JOHN H. WILSON, C. A. C.

MEMBERS OF THE COUNCIL (For one year)

COLONEL CHARLES C. DAWES, C. A. (Ill. N. G.)

LIEUT. COLONEL J. A. GREEN, G. S. C. (C. A. C.)

LIEUT. COLONEL JAMES S. ERVIN, C. A.-Res.

Upon assuming the chair General Gulick officially declared the United States Coast Artillery Association to be in existence. He thanked the members of the Committee and expressed his gratification at the success which has attended the Association in its beginning. He stated his belief that "this Association with its high purposes and splendid membership is going to have a most beneficial effect in the development of a common Coast Artillery spirit among all the components of our arm and in bringing us closer together in a common purpose."

General Gulick also stated that while he appreciated the high honor conferred upon him in becoming the first president of the Association he did not believe that the president should always be the Chief of Coast Artillery or that his election should be considered a precedent. In the organization period there is much assistance which can be given the Association by the Chief of Coast Artillery. In his capacity as Chief of Coast Artillery and President of the Coast Artillery Association he felt a deep responsibility and would add his strenuous effort in assisting the Association through its organization period.

General Gulick then discussed the COAST ARTILLERY JOURNAL and its relationship as the official organ of the Association. For the first time it was publicly announced that the income derived from the operation of the JOURNAL as well as its accumulated assets would be transferred to the treasurer of the Association to be used for the benefit of the Association and in accord-

ance with its Constitution. He expressed the desires "that the JOURNAL become an open forum for the discussion of our problems" and the free expression of professional opinion. In his remarks General Gulick left no doubt that the JOURNAL will hereafter be definitely the organ of the Association and not that of the Chief of Coast Artillery. He expressed the hope that, while membership in the Association carried no definite obligation to subscribe to the JOURNAL, all members should have a particular interest in supporting the publication which enables the Association to operate without payment of dues or assessments.

At the conclusion of his brief address General Gulick presented a number of distinguished officers of all components who spoke in favorable terms of the Coast Artillery Association and its promises for the future. Among the speakers were Major General Andrew Hero, Jr., former Chief of Coast Artillery; Major General H. D. Todd, Jr., Brigadier General S. D. Embick, Col. Robert S. Allyn, CA-Res.; Col. Joseph P. Tracy, C. A. C.; Lt. Col. J. S. Ervin, C. A.- Res.; Major W. W. Burns, C. A. (D. C. N. G.)

Following the remarks by these officers the President stated that the formation of local branch chapters of the Association would be one of the first concerns of the Executive Council. He desired an expression of opinion from officers in all localities as to the best manner in which local organizations may be effected. He called attention to the fact that certain local Coast Artillery organizations have been in existence for years. The effort expended in their formation and the

interest which they have inspired are in entire accordance with the future plans of the United States Coast Artillery Association, and will receive recognition. The Council will consider the formation of branch associations as well as the recognition of local associations already in existence and will adopt by-laws in accordance with its decision.

The Chair then asked that any new business be brought before the meeting. A member then moved that a resolution be adopted as follows:

"Inasmuch as General Charles P. Summerall, former Chief of Staff, United States Army, has rendered conspicuous and outstanding service to the United States and to the Coast Artillery Corps of the United States Army, be it resolved, that General Charles P. Summerall, U. S. Army, Retired, be made an honorary member of the United States Coast Artillery Association."

This motion, being duly seconded, was unanimously adopted and the Chair directed that General Summerall be formally notified.

There being no further business to come before the Association, the meeting became informal while a buffet supper was served. The evening was concluded with entertainment features furnished by the Fort Monroe Dramatic Club.

General Gulick expressed his satisfaction with the success of the first meeting and the enthusiasm which has attended the organization of the Association. The meeting was then adjourned.



Interested Spectators at a Demonstration at Huntington, W. Va.

The Role of Seacoast Fortifications

By Brig. General S. D. Embick, U. S. A.

WHEN the writer was asked to prepare a paper on the foregoing subject his first impulse was to question its need. Our present extensive and efficient system of coast fortifications is conclusive as to the importance in which such fortifications are held by responsible authority. In fact they have received the continuing attention of successive administrations since the beginning of the last century. As a result our present system represents an expenditure of \$250,000,000, and a replacement value of about \$400,000,000.

On further reflection, however, the writer recalled that from time to time since the World War there have appeared statements expressing or implying doubt as to the utility of coast fortifications. Of course such statements do not emanate from responsible military sources. They appear in the press, or at times are expressed by our younger officers.

The premises underlying these statements are varied. Some appear to be predicated upon a misconception of the role of coast fortifications in the World War. They imply that except at the Dardanelles, such fortifications played no part in that war. Others are based upon the advent of new weapons, as aircraft, or mobile artillery of large caliber.

Such statements are perhaps not surprising. We are prone to forget that our military effort in the World War was shaped by unusual circumstances, so that many of its incidents can not be used as criteria of general military application. Our Allies had obtained undisputed command of the sea, freed our coasts from danger of attack, and afforded us bases for our operations against the enemy. Relieved of menace at home, we could disregard the interrelationship that normally has to be maintained between coast fortifications and other elements of the national defense, and employ means and measures not otherwise practicable.

It is obvious therefore that an examination into the merit of coast fortifications should be made against a broader background than that of our participation in the World War. So we may ask ourselves—What are their particular qualities that have caused them in the past to be given so important and distinctive a role? Has that role been accorded solely in response to the theories of able proponents, among whom Mahan is the best known? And should those theories now be discarded in the light of more recent developments? Mahan has presented them in an unusually able and convincing fashion. But he did not advance them as theories originating with himself. Their validity appears to have been recognized from the earliest times and to be derived from the facts. The Board of Officers that over a century ago made the first comprehensive study of our defensive needs (Bernard Board), pointed out that while the fortification of an extensive

land frontier may be of doubtful utility, no nation, either in modern or ancient times, has questioned the value of maritime fortifications.

In warfare as in the conduct of civil activities it is a truism that the means employed for a particular end should combine economy with suitability. In warfare more than in civil activity economy of effort is a compelling motive. But a further consideration applies to the choice of military means. They must not be such that they can be readily neutralized or destroyed by enemy effort.

Let us apply criteria to the matter in hand. Let us assume that as an alternative to coast fortifications we disperse our naval forces in localized detachments for harbor defense. How would such means compare for that purpose with coast fortifications? In brief, should we not be substituting costly and vulnerable floating batteries for comparatively cheap and invulnerable land batteries?

A few guns on shore will do the work of many afloat. There are no limitations as to weight; they are inexpensive in cost in both men and money; their life is not cut short by the obsolescence of their platforms; they can not be sunk; and they can not be neutralized with certainty save by capture.

To give each naval detachment a strength that would be superior to the combined naval force an enemy could bring against it, would obviously be out of the question. An enemy attacking our coasts will not dissipate his strength by dividing his forces for the attack of a number of objectives. To the utmost he will conserve his strength and concentrate his effort.

The effectiveness with which our sea forces can meet that enemy effort will depend upon the degree of their concentration and freedom of movement. To parcel them out for local harbor defenses would be not only to sacrifice their mobility, but to fritter away their strength in small detachments to be beaten in detail by enemy action. Such a dispersion would play directly into an enemy's hands. It is precisely the situation he would seek to bring about by actual or threatened naval raids upon our coasts.

Our Navy must be free to seek out and oppose the enemy upon the high seas. It can do so only if freed from the duty of local coast defense; if our important harbors, including naval bases, are secure against enemy attack.

Let us turn now to the role of mobile land forces. It is sometimes suggested that inasmuch as the mobile army is now accompanied by movable artillery of large caliber, that army in itself will ensure the security of our ports against naval attack. The considerations that apply here are similar to those applying to the Navy. The mobile army must be prepared to meet a concentrated effort of the hostile land force wherever

it may be made. It, too, must possess power of concentration and freedom of movement. It, too, must be freed from anxiety for local coast defense, so that it may be conserved to meet the enemy's main effort on land, an attempted invasion.

From the foregoing it will be seen that the purposes of coast fortifications may be stated, in brief, as follows:

To protect our important coastal cities and naval bases against capture or damage by enemy warships, and their use as bases of operations by an invading force, and thus to free our mobile land and sea forces for the performance of their true functions; and to provide security against naval attack to our merchant shipping when in home ports.

It will be noted that a distinctive characteristic of coast fortifications lies in their localization. Whether or not the armament included in a particular fortification be mounted on fixed, or movable, or semi-movable carriages—or, as will generally be the case in practice, consist of all three types—does not affect the question under discussion. Developments in the art of Ordnance engineering now permit the mounting on movable carriages of larger guns than heretofore. Such developments merely raise the technical question of whether in the fortification of a given site in a particular harbor, it is wiser to install fixed armament, or allocate thereto movable armament. When so allocated the latter becomes divorced from connection with the field army, and becomes an integral part of the coast fortifications to which allocated, articulated with the fire control, searchlight, and mine systems of the latter.

It is thus seen that coast fortifications are distinguished from other elements of the national defense both by the special nature of their mission and by their localization. It is these distinctions that led in 1907 to the division of the coast and field artillery, and that afford today reasons equally as cogent for maintaining the coast artillery as a distinct and separate arm.

In what measure do the foregoing considerations apply to aviation? Here we have an arm of exceptional mobility; but one also that is exceedingly expensive, and that can be neutralized by superior enemy air forces. Like the Navy and the mobile land forces, it, too, can be employed to full advantage only if it be free to seek out and oppose the enemy wherever he may be, and should not be dispersed to be beaten in detail. To rely upon aviation for the security of our harbors against naval attack would again be a wasteful use of a very expensive arm. To provide it in such strength that our localized air forces would everywhere be found superior to the concentrated air forces of an enemy, is quite out of the question. Aside from the prohibitive expense, such a solution is precluded by the characteristics of the arm. As an example, we may note that notwithstanding the marked preponderance in strength of Allied aviation in 1918, throughout even so limited a region as the Western Front the

Germans were able to obtain local air superiority practically at will.

The advent of aviation, therefore, has not obviated the need of maintaining fortifications for the defense of our coasts against naval attack. It has, however, brought with it a new need, the anti-aircraft weapon. This arm, in providing a local defense against air attack, bears to aviation a relation largely analogous to that of coast fortifications to the Navy and the mobile land forces, tending to free aviation for its most advantageous employment.

As illustrative of the foregoing discussion we may recall some of the influences of coast fortifications upon the operations of the World War. The confidence of the British in the security of their ports permitted their naval forces to be concentrated in a comparatively remote position and held for their proper task, that of opposing the German fleet; and relieved them of the need of withholding larger forces from their armies overseas; while even the crude anti-aircraft weapon of the period permitted the bulk of their aviation to be employed abroad. The fortifications installed by the Germans on the Belgian coast gave security to their right flank. The fortifications on the Adriatic conditioned the land and naval strategy of both belligerents. Those at the Dardanelles defeated the efforts of the British fleet to force a passage, gave time for the assembly of the Turkish mobile troops to meet the later British landing operations, and so restricted their course as to make inescapable their ultimate failure.

In our own history a notable example of the role of coast fortifications was the part played by Fort Monroe in the Civil War. A Federal outpost, thrust well forward into the heart of the Confederacy, it was held by a small garrison that at times was reduced to a few companies, and at no time was so large as to be a serious drain upon the strength of the Federal armies. Yet despite its meager numbers, it closed to the Confederacy throughout the war the entrance to Hampton Roads and the James River; made it possible for the Federal Government to maintain complete control of the invaluable water communications of Chesapeake Bay; afforded the Federal Government an advanced base for the joint expeditions against the Carolina coast; and a base for the operations of the Army of the Potomac against the capitol of the Confederacy. Fort Monroe was not attacked, the Confederates deeming it too strong. These momentous results were a consequence of its mere existence.

In one sense the World War has placed added emphasis on the role of coast fortifications. In earlier times an army invading an enemy's coast carried little impedimenta, and that mainly food, of which it could expect to supply itself in whole or in part from enemy territory. So any strip of beach not too rough for small boats would serve for the point of invasion. Now that the vast equipment of armies reflects our machine age, a beachhead will no longer suffice, as witness British and our own experience in France. An invading army will now require the large anchorage, wharf, and terminal facilities that only the well-developed

port can provide. The immediate seizure of such a port is a sine qua non for a successful coastal invasion in force.

Occasionally the suggestion is heard that much of our existing seacoast armament is obsolete. To this it may be replied not only that our existing armament is still as effective within its range as it was at the date of its installation, but also that the results of recent naval agreements, which favor the construction of lightly armed and armored, or unarmored ships, will bring about in effect a marked increase in the power of our existing seacoast armament.

With us as with all other important maritime nations seacoast fortifications will continue to fill an essential

and important role in the system of national defense. The sea will remain the world's major highway. Serious attacks can reach us only by way of the sea, so our sea frontiers will continue to be our critical frontiers.

With us to more than the usual degree, coast fortifications in protecting our important seacoast cities and harbors against naval attack, will fill an indispensable role. For in doing so they will serve not only that immediate purpose, but that purpose which is of greater importance from the broader standpoint of the general national defense, namely, that of freeing our mobile forces, land, sea, and air, for the performance of their true functions.

Antiaircraft Officers Serve With Air Corps

IN the Sixth Corps Area, the Corps Area Commander, Major General Frank Parker, has taken an active interest in arranging short details for officers of the ground forces to serve with the Air Corps. These details are for periods of ten days. During November two officers of the Air Corps were flown to Fort Sheridan from Scott Field and exchanged for four officers from Fort Sheridan, among whom was 2d Lieut. Grant E. Hill of the 61st. (The Air Corps is notified that this trade of 2 officers for 4 is by no means admitted as indicating the relative value of its officers and ground officers).

The 10 day period which Lieut. Grant spent at Scott Field was extended three days due to bad weather, but since he applied for an extension of the detail the delay probably was popular. The officers visiting Scott were given an opportunity to fly in both heavier-than-air and lighter-than-air equipment and attended many of the classes being conducted for Reserve officers then on active duty for fourteen-day periods. The ground officers also gave lectures covering their own arm of the service. The Air Corps officers at Sheridan reported their visit extremely interesting and of great value in obtaining an appreciation of the view point of the ground troops. It is believed that the interchange of officers, even for such short periods, will be of especial benefit in general maneuvers.

The March of The 61st Coast Artillery (AA)

By Maj. J. H. Cunningham, C.A.C.

THE 61st Coast Artillery (AA) left Fort Monroe on May 14 and arrived at Fort Sheridan on June 13; the distance covered was 1203 miles, of which over 160 miles, from Lexington, Va., to Gauley Bridge, W. Va., was across the Blue Ridge and the Allegheny Mountains.

Preparations for the march were complicated by the fact that the regiment was making a permanent change of station, that a general reorganization was going on at Fort Monroe and that target practice, both 61st Coast Artillery and School, was held up to two weeks before departure.

On the other hand there was plenty of advance notice of the move and preparations were begun nearly six months ahead. In making preparations for the march and in preparing this article, very great assistance was furnished by the excellent article by Col. Dunn, in the January, 1930, issue of the JOURNAL, on the march of the 62nd Coast Artillery, from Fort Totten to Fort Story and return, in the spring of 1929.

Preparations for the march included:

- Training of personnel.
- Repair of transportation.
- Securing additional transportation.
- Choice of itinerary and stopping places.
- Estimate of funds required.
- Decision as to march formation and other details.
- Securing police escorts.
- Contacts with civil officials.

The period from March 15 to May 1 was taken up with joint training with the Air Corps, target practice and school firing, leaving less than two weeks to wind up matters at Monroe and pack up. This did not leave much time to train drivers, but during January, February and March, short marches, by battery, were held about once a week.

Prior to the march, the regiment did not once go out on the road as a regiment; in fact so far as I am aware, it had never done so except to move to Grand View or Fort Story and return. Detachments had, of course, made frequent marches of much greater length.

Through the assistance of the Chief of Coast Artillery, arrangements were made to send all vehicles needing repairs (which included nearly all the transportation of the regiment) to Holabird for overhaul, and a few last minute repairs were made by the Coast Artillery School garage. It is a pleasure here to state that Col. Stayer the commanding officer at Holabird, and Col. Kimmel the assistant commandant of the Coast Artillery School, gave us every assistance in their power so that the regiment could move out as scheduled.

The question of additional transportation was not so easy. Although additional vehicles of all classes

were needed the principal shortage was in prime movers and light passenger cars. There was only one truck in the regiment capable of pulling a gun over the mountains. To cover this deficiency, three Infantry tank carriers were altered slightly for the purpose and issued to the regiment about two weeks before the march began.

There was only one light passenger car available, a Chrysler. Four more were absolutely necessary to conduct the convoy. These were finally obtained from Fort Monroe and Fort Eustis, to be available to the 61st as far as the boundary of the Third Corps Area



Reviewing the Regiment on its Departure from Fort. Monroe.

only; there they were replaced by four reconnaissance cars from the Fifth Corps Area which stayed with the regiment thru to Fort Sheridan.

The next concern was to choose an itinerary. First of all a request was made for permission to send an officer over the road in advance, but this was refused due to lack of funds. It is believed that if this reconnaissance had been made, it would have saved considerable money to the Government, since, upon arrival at Lynchburg, it was necessary to make a fifty mile detour via Roanoke, to reach Lexington, Va., the direct route being torn up for repairs and impassible for heavy trucks.

A preliminary map reconnaissance and information from officers who had travelled west, as well as the fact

that a large detachment had to proceed to Camp Knox for the summer, indicated U. S. Route 60 as the best route to take as far as Louisville, Ky. It presented the easiest grades, it was direct, and it made it possible for the regiment to proceed intact as far as Louisville, Ky., before separating. Furthermore it made it possible to stop at Jeffersonville Q. M. Depot, opposite Louisville, where facilities would be available to repair transportation and get new transportation if necessary.

Before making a definite decision, however, letters were written to each State Highway Commission giving full information as to vehicles, and maximum weights, and asking if the route selected was practicable. Based on the answers received, a few small changes were made in the itinerary first selected. The letter is quoted as follows:

April 11, 1930.

STATE HIGHWAY COMMISSIONER,

Richmond, Virginia.

Dear Sir:

The 61st regiment of Coast Artillery (Antiaircraft) is making a march from Fort Monroe, Virginia to Fort Sheridan, Illinois on a change of station. As you will see by the march schedule attached we will leave Fort Monroe, Virginia on Wednesday, May 14, and leave the state on Thursday, May 22, '30, marching over the route indicated.

The regiment will consist of about 100 vehicles of all classes and about three hundred men. The convoy will be split into two main columns, a light column and a heavy column. Each column will be split into two or more sections spaced along the road so as to interfere as little as possible with the normal traffic. It is not contemplated that we will march on either Saturday

or Sunday so that there will be no interference with week end traffic.

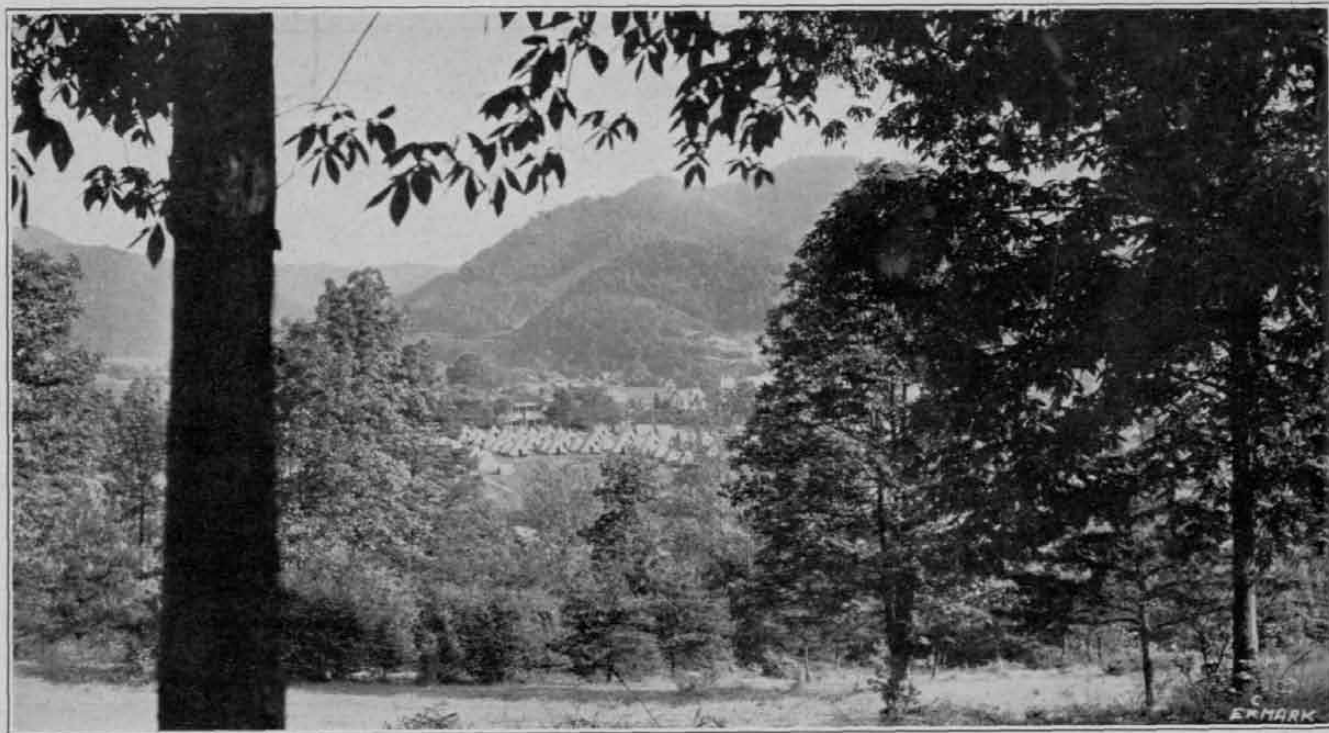
Our heaviest load will consist of a 3" AA gun and its prime mover. This gun has a road weight of 9 tons, the prime mover will have a road weight of 7 tons. This weight will be distributed on axles as follows: three and one half tons on each of two axles 9.8 feet apart; four and a half tons on each of two axles 9.8 feet apart; distance between rear axle of prime mover and front axle of gun 13 feet. All wheels on this load are large-tread pneumatic tired. This load can be split into its components for short bridges if necessary.

Our order will require us to change station from Fort Monroe, Virginia to Fort Sheridan, Illinois, leaving Fort Monroe not later than May 15, 1930, and detaching seventy-five men, three officers and a large part of our equipment to Camp Knox, Kentucky, enroute. The regiment will continue to Fort Sheridan for permanent station. The detachment going to Camp Knox must arrive by June 5, 1930. This limitation has determined the route over which we must proceed in order to fulfill our mission.

It will greatly facilitate our march if you can furnish us with information on bridges, detours, steep grades, points of interest along the route and any other items of information which you can deem essential for our march thru your state. If the itinerary selected does not appear practicable, will you suggest another?

We would greatly appreciate detailed road maps of our route through the state of Virginia, and also the motor vehicle and traffic laws of the state.

I especially desire to have a state police escort with the regiment at all times in order to facilitate our march and at the same time interfere as little as possible with traffic; can you arrange this for me for your state or if not, to whom shall I apply? In addition I shall arrange for a city police escort in passing through each large city.



61st Camp at White Sulphur Springs, W. Va.

Any action that you may take in this matter will be greatly appreciated by the entire regiment.

Yours sincerely,

Major, 61st C. A. (AA),
Commanding.

1 Incl—

Route of march.

With reveille at 5.00 A. M., it was figured that the column would take the road about 7:00 A. M., allowing ample time to have breakfast, break camp and load. In order to reach the next camp site by mid-afternoon, and allowing an average of about 9 miles per hour for the slowest trucks, a day's march of about 60 miles was fixed upon, shortened in the mountains and increased in level country. The shortest march was about 40 miles and the longest 80; usually the heavy column was in camp by 3:00 P. M., and on only one night, at Richmond, did the heavy column arrive after dark.

The complete itinerary is given herewith.

Except for a detour via Roanoke already mentioned, our original schedule was followed exactly, except that the detour put the regiment one day behind schedule and to make this up it was necessary to pass thru two of the stopping places originally selected; from Indianapolis the march was on schedule. Except in one instance, when a half day march was made on Saturday, no marches were made Saturdays or Sundays.

Before asking for funds for the trip, it was necessary to know how much property was to be shipped by rail

and this in turn depended on how much motor transportation would be available. As the latter could not be determined until just prior to departure, it complicated matters, requiring two separate estimates for funds under the following headings:—

- (1) Packing and Crating Household Goods;
- (2) Transportation of Authorized Baggage of Officers and Enlisted Men
- (3) Transportation of Dependents, Officers and Enlisted Men.
- (4) Rental Allowance, Officers.
- (5) Transportation of Military Impedimenta.
- (6) Packing and Crating Organization Property.
- (7) Gasoline and Oil for Motor Vehicles.
- (8) Emergency Repairs to Motor Vehicles.
- (9) Purchase of Fuel and Ice.
- (10) Rental of Campsites.
- (11) Tolls and Ferriage.
- (12) Telegraph and Telephone.
- (13) Candles, Matches, Kerosene.
- (14) Motor Vehicle Repairs before start.
- (15) Transportation (by freight) of vehicles (break-downs) which cannot be towed.

No funds were received under item (15) but it became necessary twice to ship vehicles by freight during the march. Authority for shipment was obtained by telegraph.

Next, it was necessary to decide on the formation for the march and assign duties to the personnel. The organization of the column, as shown in the march

Route	Place	Mileage between points	Total mileage	Remarks
U. S. 60	Fort Monroe, Virginia	0	0	Start of March, May 14, 1930.
U. S. 60	Fort Eustis, Va.	30	30	Overnight halt, May 14, 1930.
U. S. 60	Richmond, Va.	60	90	Overnight halt, May 15, 1930.
U. S. 60	Farmville, Va.	67	157	Week end halt, May 16, 17, 18, 1930.
U. S. 60	Lynchburg, Va.	54	211	Overnight halt, May 19, 1930.
Detour	Roanoke, Va.	62	273	Overnight halt, May 20, 1930, <i>detour from selected route.</i>
U. S. 11	Lexington, Va.	45	318	Overnight halt, May 21, 1930.
U. S. 60	Clifton Forge, Va.	36	354	Overnight halt, May 22, 1930.
U. S. 60	White Sulphur Springs, West Virginia ...	40	394	Week end halt, May 23, 24, 25, 1930.
U. S. 60	Rainelle, W. Va.	43	437	Overnight halt, May 26, 1930.
U. S. 60	Falls View, W. Va.	45	482	Overnight halt, May 27, 1930.
U. S. 60	Charleston, W. Va.	36	518	Overnight halt, May 28, 1930.
U. S. 60	Huntington, W. Va.	49	567	Overnight halt, May 29, 1930.
U. S. 60	Morehead, Kentucky	78	645	Week end halt, May 30, 31, June 1, 1930.
U. S. 60	Lexington, Ky.	71	716	Overnight halt, June 2, 1930.
U. S. 60	Shelbyville, Ky.	59	775	Overnight halt, June 3, 1930.
U. S. 60	Louisville, Ky.			Halt, June 4 & 5 1930.
Bridge	Jeffersonville, Indiana	32	807	
U. S. 31	Camp Knox, Ky.	32	839	Knox Detachment only, arrived June 6, 1930.
U. S. 31	Columbus, Indiana	76	883	Sheridan column overnight halt, June 6, 1930.
U. S. 31	Indianapolis, Ind.	46	929	Week end halt, June 7 & 8, 1930, back on schedule.
U. S. 34	Crawfordsville, Ind.	43	972	Overnight halt, June 9, 1930.
Ind. 34				
Ill. 10	Hoopeston, Illinois	67	1039	Overnight halt, June 10, 1930.
Ill. 1				
Ill. 1	Kankakee, Ill.	59	1098	Overnight halt, June 11, 1930.
Ill. 17				
U. S. 45				
Ill. 4	La Grange, Ill.	65	1163	Overnight halt, June 12, 1930.
Ill. 46				
Ill. 45				
Ill. 4A	Fort Sheridan, Ill.	40	1203	Arrived noon, June 13, 1930.
U. S. 42				

order quoted further on, included an advance party, a light column, a heavy column and a motor repair section. The heavy column as first organized, consisted of battery sections but after the second day out this column was divided into an F. W. D. and a Liberty section; except for assigning an additional officer to the repair section no further changes were made in the original organization.

It was originally intended to bivouac in shelter tents on week day nights and use big tents on week end stops; however, in order to make the men more comfortable, the big tents were pitched every night except two; the first night at Eustis, where the regiment used camp buildings and at Richmond, where the heavy column did not arrive until after dark. Cots were used and the men were not allowed to sleep in or under trucks; as a consequence uniforms looked well throughout the march and there was practically no sickness.

Overcoats were taken as well as three blankets per man, which did not seem necessary at Monroe but which was justified during the cold weather encountered in the mountains. The convoy uniform was woolen O. D. shirts, with coats or overcoats when necessary; in the larger cities, men wore coats and caps on pass at night, otherwise shirts and hats were permitted. Denim uniform was worn only when on fatigue or when working on trucks.

Letters were written well in advance to the Mayor of each city or town selected as a stopping place, of which the following is an example.

April 7, 1930

His Honor

The Mayor

Kankakee, Illinois.

Dear Sir:

The 61st regiment of Coast Artillery (antiaircraft) is making a march from Fort Monroe, Virginia to

Fort Sheridan, Illinois on a change of station. You will see on the inclosed route that this regiment expects to stop in or near Kankakee, Illinois, on Wednesday, June 11, 1930, and to depart on Thursday, June 12, 1930.

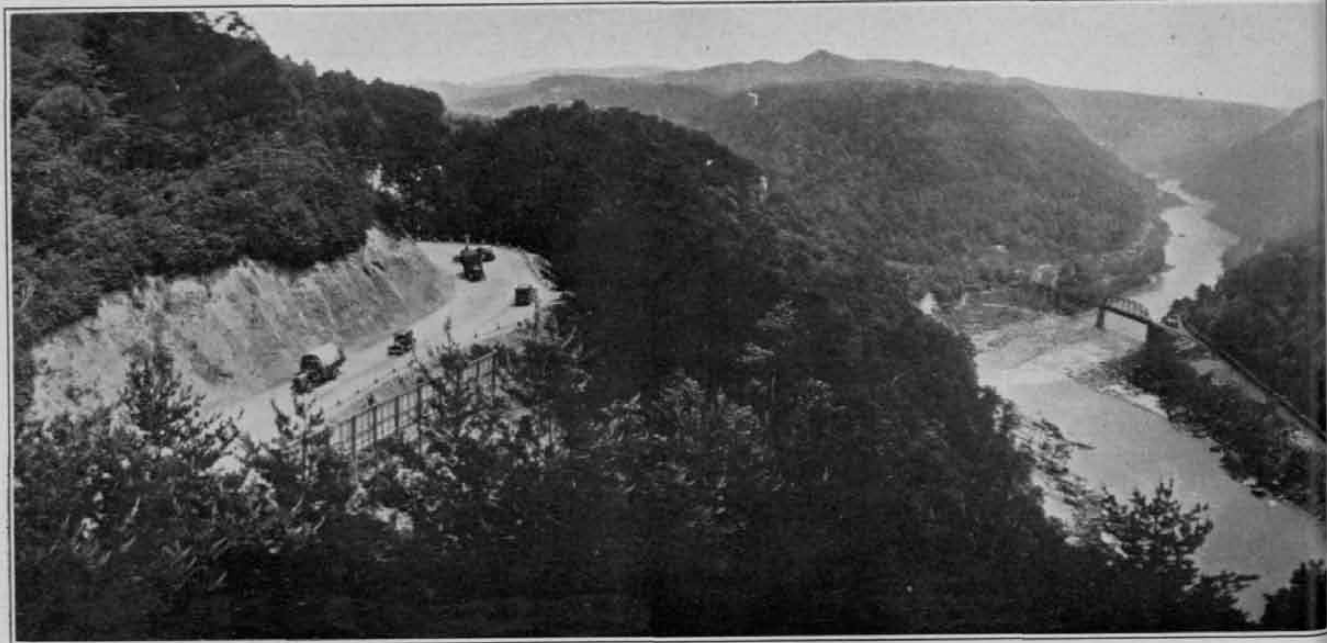
Our columns will consist of approximately eighty vehicles and two hundred men. Vehicles will be of various kinds including Cadillac searchlight trucks, a Duplex searchlight truck, 5 AA searchlights, four 3" AA guns, F. W. D. trucks and Liberty trucks. The heaviest single load will be the 3" guns weighing nine tons equally distributed on four pneumatic tired wheels. The heaviest double load will be about fifteen tons, consisting of the gun mentioned above with its prime mover and the weight will be distributed over eight or more pneumatic tired wheels, and over a distance of about thirty feet.

It will greatly facilitate our march if you can inform us if there is a suitable campsite nearby which you can place at our disposal during the period of our stop. In this connection it is desirable that a plentiful supply of good water be available at or convenient to the campsite. To prevent blocking traffic it is desirable that a side road be available for parking heavy vehicles which cannot be placed on soft ground.

Supplies that will have to be purchased locally will include foodstuffs, ice, fuel, about two thousand gallons of gasoline and quantities of oil. An advance officer will arrive from four hours to one day ahead of the columns to make necessary arrangements for supply, and to select campsite and parking space.

It is desired to have a police escort thru your city to the campsite on the day of arrival and if necessary from the campsite on the day of departure. If you have no objections I will arrange this directly with the police authorities, by telephone or letter, at a later date.

I should appreciate any information you can give me as to campsites, parking spaces and points of interest that the men would enjoy visiting if they have time. In this connection these men have very little



61st C. A. Descending Gauley Mountain, W. Va.

money to spend and cannot afford to pay admission fees of any size.

Your citizens and their families are cordially invited to visit the regiment in camp and to inspect the anti-aircraft guns, machine guns, and searchlights with which the regiment is provided.

Sincerely yours,

Major, 61st C. A. (AA),
Commanding.

1 Incl.—

Route of March.

These letters almost without exception brought immediate replies, not only offering us complete facilities but in most cases free camp sites, free amusement for the men at movie houses, ball games, or amusement parks and courteous invitations to the officers to dinner or to play golf. At only five places was it necessary to pay for the use of a campsite.

Letters were also written to the State Police of each State and the Police of each large City, asking for police escort. These were furnished and were of the greatest assistance in facilitating the march of the columns and in avoiding unnecessary interference with traffic. For instance the first day out near Fort Eustis, there was a section of the road torn out for repairs; in the heavy rain this speedily became a mud-hole and took three hours, and the use of tractors to get some of our heavy loads through. Knowing the ordinary traffic over this road, it can well be imagined what the situation would have become if the State Police had not been there to control traffic. Without exception the police gave us cordial cooperation; the state police details often remained with us for several days, ate with us, lived with us and hence considered themselves as part of the regiment. One of the Virginia State Police, in particular, Captain Boscher, went with us from Fort Monroe to White Sulphur Springs; he spent one entire Sunday out making a road reconnaissance for us, and on his own suggestion, brought a convoy of four light cars all the way back to Fort Eustis and Fort Monroe.

Having made the necessary decisions a preparatory order was issued, followed by a field order and administrative order.

In order to facilitate departure and to let the men become accustomed to camp routine the last three days at Fort Monroe were spent in camp in rear of Battery Anderson. At 9:00 A.M., May 14, in a drizzle the head of the column passed in review in front of Major General H. D. Todd, Jr., and Colonel Geo. A. Nugent, on the steps of the Coast Artillery School and the march had begun.

Except for the delay due to the torn up road, mentioned above, the column arrived at Fort Eustis without incident the first day; the second day's march to Richmond was long and much difficulty was encountered entering the city due to the hills and the traffic, as our campsite was at the fair grounds in the northwestern section of the city. The columns, already delayed, had to go through heavy traffic and did not get to camp until after dark, the only time

this happened in the whole trip. We were honored by a visit in camp from Major General John W. Gulick, Chief of Coast Artillery, who had supper with us in the open at about 9:00 P.M.

The next morning at 9:30 the regiment passed in review before Governor Pollard and General Gulick in front of the Jefferson Hotel, and crossing the James, took to the open road towards the west. Here we will interrupt the account of the march to discuss briefly the camp and march routine, based on the following list of calls.

List of Calls

	Daily Ex. Sat. & Sun.	Sat.	Sun.
Reveille—1st call	4:45 AM	7:15	7:15
Reveille	4:55	7:25	7:25
Assembly	5:00	7:30	7:30
Mess Call—Breakfast ..	5:30	7:45	7:45
Dinner .....	.....	12:00 M	12:00 M
Supper	5:30 PM	5:30	5:30
Guard Mount—Half hour after arrival heavy column. (1st call 15 min. after arr. H. C.)	4:30	4:30	4:30
Officers call	5:00 PM	8:00 AM	8:00 AM
Sick call	5:00 PM	9:00 AM	9:00 AM
Retreat—1st call	5:20 PM	5:20 PM	5:20 PM
Assembly	5:30 PM	5:30 PM	5:30 PM
Tattoo	9:00 PM	9:00 PM	9:00 PM
Call to Quarters	9:45 PM	9:45 PM	9:45 PM
TAPS	10:00 PM	10:00 PM	10:00 PM

Bugle corps will attend reveille and retreat, except reveille Sunday and retreat Saturday.

Guard mount will be informal unless otherwise directed.

One officer in each battery will stand retreat. The O. D. will be the only officer required to stand reveille. The guard will stand relieved at reveille, except Saturday and Sunday.

No attempt was made in the mornings to hurry the men in their breakfast or in loading; after a few mornings everything worked smoothly and morning after morning the light column pulled out within a very few minutes of 6:50 A.M. Except for the repair section, everyone was on the road well before 7:30. The campsite was inspected by the surgeon and the regimental commander each morning before the last section of the heavy column was permitted to leave.

The Supply Officer, the Advance Officer and the Adjutant with small details proceeded at once to the next campsite, which had been selected the previous day by the Advance Officer. Final arrangements were made for police escorts, markers put out where necessary, parking space selected and camp staked out prior to the arrival of the light column.

After indicating the campsite and completing the arrangements given above the Advance Officer immediately proceeded to the next stopping place, making a careful reconnaissance enroute, where he made contact with the mayor or other officials and selected the campsite. At night he returned and stayed with the regiment.

The *light* column was usually in camp by 10:30 or 11:00 A.M., and immediately pitched the officers' tents, the hospital tent, the guard tent, and as many of the big tents as it could carry along.

The three mess trucks with rolling kitchens, were formed as a separate section, usually reached camp before noon and hot coffee was served to the men who

were in camp; all men ate sandwiches for their noon-day meal and this was most satisfactory to all concerned.

The heavy column was divided into a Liberty section and an F. W. D. section, with three trucks carrying tentage at the head. If it appeared that the heavy column would not arrive in camp before 3:00 P.M., which was sometimes the case, the tentage trucks were sent ahead so that the tents would be up well before dark. Usually all trucks were in and parked, and trucks gassed and serviced, so that all men could stand retreat at 5:30.

All drivers *stayed on their trucks* until gassing and servicing were completed; this was never put off until morning.

Whenever a vehicle became disabled, column or section commanders made an immediate decision—either to tow it or leave it for the repair section to pick up or repair. In consequence, the main column was not delayed, but it meant late hours on the road or in camp for the repair section. Of all the men in the regiment the members of this section worked the



Head of Column Crossing Mill Creek Bridge May 14, 1930

hardest and it was due to them, more than to anyone else, that the march proceeded so smoothly. At Richmond, they worked until 5:00 A. M., and every vehicle passed the reviewing stand under its own power. On arrival at Sheridan, just one vehicle was being towed.

The repair section as originally organized consisted of one officer, six mechanics, two class B trucks carrying spare parts, a mobile ordnance repair shop mounted on an F. W. D. chassis, a light car and a motorcycle for control. At the end of the third day it was apparent that this force was insufficient to carry on the repair work so it was increased to two officers and eleven mechanics. A gas truck and another motorcycle were added to the section. This force proved adequate to keep the vehicles running.

When the columns were on the march six mechanics traveled with the repair section and two with each column. When a truck was left for the repair section by any column a mechanic stayed with it and started the repair work which was often on the way to completion when the repair section arrived at the vehicle.

When repair was completed the column mechanic was sent forward by motorcycle to rejoin his column and the truck traveled with the repair section or was sent on alone with explicit instructions as to the speed it should make.

Since most of the motor trouble developed during the last twenty miles of the day's march mechanics were relayed forward along the columns during this time to begin repairs at once. This practice saved many hours on the road for the repair section and crippled trucks. At this time also a noncommissioned officer of the repair section went into camp and listed all the repairs necessary on vehicles in camp. Upon arrival of the repair section the machine shop was put into action at once and repairs upon vehicles in camp began. The repair section often worked far into the night and early morning by light supplied from the repair shop. Only when necessary parts were not on hand and had to be obtained from the supply depots were trucks towed from camp to camp; at all other times vehicles left camp under their own power.

The most outstanding truck in performance was the Walters Truck used as a prime mover for the guns. This truck not only towed its own gun into camp regardless of road conditions, but several times returned over the road to pick up and tow disabled vehicles in the mountains. On the last day in the mountains it towed two guns up Sewell and Meadow Mountains with long seven and eight percent grades. This truck is almost ideal as a prime mover for guns, its short wheel base makes it easy to maneuver and it has sufficient power, speed and traction to move the gun over any kind of reasonably firm terrain.

Two formations were held each day—reveille and retreat. On a few nights, due to lateness in arriving in camp, retreat was not held, but on a long march like this, it was considered important to do everything possible to preserve discipline and appearance.

A guard was always mounted and posted over the truck park and at the entrance to camp. All men going on pass (and there was never any general restriction of passes) were made to go by the guard at the gate and were turned back if they were not properly dressed. Except in the larger cities men were allowed to wear any proper uniform on pass; at several places caps and blouses were prescribed.

Special efforts were made to make contact with civil officials, and with Reserve and National Guard officers. Calls were made by the regimental commander on the Mayor and the Chief of Police immediately upon arrival and almost every night a demonstration was held, putting a gun and machine gun into position and illuminating the camp and the surroundings with searchlights. Large crowds visited camp and witnessed these demonstrations.

Saturday mornings were devoted to repair of vehicles, cleaning up and preparing for inspection which was held shortly after dinner; from then until retreat Sunday, except for necessary guard and fatigue, men were free to go where they chose. The behavior of the men was excellent, was commented on in many of

the local papers and was a credit to the Army; altho precautions were taken at all large cities either by having a noncommissioned officer at Police Headquarters or in a few instances by posting a provost guard, nothing happened.

From Richmond the march proceeded without incident to Farmville and Lynchburg, where U. S. 60 was found impassible necessitating a 50-mile detour via Roanoke to reach Lexington, Virginia. There the



61st C. A. Climbing the Blue Ridge

members of the regiment saw parade at Virginia Military Institute and put on the usual demonstration, attended by a large crowd. On the horizon, to the west, could be seen the Blue Ridge waiting for us with its grades and curves.

The first and worst climb of the trip was encountered on North Mountain, west of Lexington, where the regiment crossed the Blue Ridge; this was a six mile grade, 8 percent in places, with a number of hairpin turns. The heavy trucks were sent up one at a time with several hundred yards interval and, to everyone's relief, they all made the grade; after that, altho there were many more grades and much more trouble, we felt we had overcome the worst obstacle.

There were no serious accidents the entire trip, and only one that could be attributed to careless driving. This occurred going through a small town when a truck, in some unexplained manner, got over on the wrong side of the road, ran on a soft shoulder, and tipped into a yard. No one was hurt and the truck was undamaged. Unusual precautions were taken going down all hills: a noncommissioned officer was stationed at the top and instructions were given on the spot to each driver to go into first or second gear, as the case might be, then and there.

A most enjoyable week end stop was made at White Sulphur Springs, 10 miles east of which we passed the crest of the Alleghenies. Free movies were available to the men, as they had been already in several other towns and all the officers and their families were invited to dinner as guests of the Greenbriar Hotel, one of the largest and finest resort hotels in the world. You may say that the 61st is strong for White Sulphur Springs!

Just east of Gauley Bridge, West Va., some of the

finest scenery of the trip was met with, the road being cut out of the cliffs far above New River Canyon, with the Chesapeake and Ohio Railway (leading straight back to Fort Monroe!) like a toy railway far below. Camp that night was on the banks of the Kanawha River just below Gauley Bridge.

The next day's march was through the highly industrialized region of the Kanawha Valley—coal mines, big industrial concerns, heavy traffic. Very enthusiastic receptions were met with at both Charleston and Huntington, West Virginia; at the former, which is the State Capital, courtesy calls were made on the Governor and the Adjutant General.

At Morehead, Kentucky, the regiment spent the week end and had pay day, the Supply Officer going all the way to Jeffersonville, Indiana, for the money. No trouble was experienced pay day night and a very complimentary article appeared in the local paper saying that the men of the regiment had behaved like gentlemen, (considerably to the relief of the town authorities, who, apparently were expecting the worst!) It was a splendid article, however, and it is certain that Army stock is high in Morehead.

It was regretted by everyone in the regiment that a longer stop could not have been made at Lexington, Kentucky, center of the beautiful Kentucky blue grass region. Every officer of the regiment, in two installments, was taken on a personally conducted tour of the big horse breeding establishments in the vicinity of Lexington; seeing Man O' War in person was certainly to the author of this article, one of the thrills that come once in a lifetime!



61st C. A. Entering Ft. Sheridan

We spent a busy, dusty and very profitable day at Jeffersonville Quartermaster Depot; five new trucks were obtained and, thanks to the assistance and co-operation given by Colonel Van Dyne and his officers, a considerable amount of repair work was done. The regiment was reorganized into the Camp Knox and Sheridan columns, which necessitated some reloading and other changes.

Major Hinman joined the regiment here and the next morning, June 6, started for Knox with his detachment which consisted of Lieutenant Merritt, 85 enlisted men and all the anti-aircraft material belonging to the regiment, except one gun and prime mover.

a machine gun and mount, and two searchlights, which were taken on to Fort Sheridan for the Military Tournament and sent back to Knox later. The detachment reached Knox, a distance of only about 32 miles, before noon that same day.

The main body proceeded straight north across Indiana, finding the wide level roads easy going after the two weeks spent in the mountains. Cordial receptions were met with at Indianapolis and at the smaller towns along the line, and the march proceeded without incident to its end. By keeping well to the west of the Chicago city limits, congested traffic was avoided although strict convoy discipline was necessary in crossing the many arterial highways and grade crossings encountered the last day.

At noon, exactly, the head of the column passed in front of Brigadier General C. H. Conrad, Jr., commanding general of Fort Sheridan, at the flagpole in front of Post headquarters, and the march was over.

The regiment arrived on schedule, with only one vehicle in tow. There was practically no sickness, which is believed to be due to the men's sleeping every night on cots in big tents. Only one man went A. W. O. L., a mess sergeant who found his job too much for him and who left us, came on ahead, and awaited us in the guard house.

Accidents were very few, six in all, none serious and only one in which one of the 61st vehicles got off the road. This is believed due to the rigid convoy discipline and to the fact that the day's marches were carefully regulated; there was never any attempt to hurry on the road; frequent stops were made, columns closed up and necessary instructions to drivers given.

Supply arrangements worked without a hitch; supplies were always waiting at camp as needed and vehicles were gassed promptly upon arrival by commercial tank trucks which went along the line and filled the vehicle tanks. Our own tank trucks were used to gas and oil the light column, upon arrival in camp, and to refill vehicles of the heavy column on the road.

A ration return covering the entire period of the march was submitted before departure and the money drawn in cash and handed to the battery commanders; they in turn; gave the Supply Officer orders to fill daily and furnished him the money to pay with.

An unusually good set of pictures was obtained of the march. Mr. Charles Ekmark the Fort Sheridan post photographer a retired enlisted man, came to Fort Monroe and took the entire trip with us taking many fine pictures. In addition our own Master Gunner, Sgt. Conklin, took a complete set of pictures of the march including short sections of motion pictures.

The Corps Area Chief of Staff and the Inspector visited the regiment at Hoopston, Illinois and watched the columns come in and camp established; as a result of this visit a letter of commendation was received a few days after arrival at Sheridan, commending the regiment upon:

- a. Appearance and discipline of personnel.
- b. Appearance and condition of vehicles.

- c. Road discipline.
- d. Orderly establishment and breaking of camp.
- e. Routine of command supervision.
- f. Courtesy in contact with civilians.

It is certain that the 61st Coast Artillery has had a very profitable month's training and it is believed that the conduct and appearance of the regiment on the road and in camp has made many friends for the Army and has given wide advertising to Antiaircraft. The following quotation from a letter received from the Mayor of Huntington, West Virginia, speaks for itself,

"Permit me to say in all frankness that the men under your command made a very favorable impression on the good people of West Virginia's largest city, and that your presence in Huntington has done more to make the average man and woman realize what our Army is doing for us, than a thousand newspaper articles."

Hqs. 61st C.A.,
FORT MONROE, VA.,
9 May 1930.

FIELD ORDERS NO. 2

1. In compliance with SO No. 59, Hq., Ft. Monroe, Va., 25 April 1930 the 61st C.A. (AA) with attached personnel will proceed by marching from FORT MONROE, to FORT SHERIDAN, ILL., on permanent change of station, departing FORT MONROE, VA., 14 May 1930.

Route:—Ft. Monroe — Richmond — Lynchburg — Lexington—Clifton Forge—White Sulphur Springs—Charleston — Huntington — Louisville — Jeffersonville — Indianapolis — Crawfordsville — Danville — Kankakee—La Grange—Fort Sheridan. See March Schedule already issued.

2. a. To facilitate the march the regiment will be divided into an advance party, a light column, a heavy column, and a repair section.

b. Advance party:

Supply Officer: Capt. R. B. Bottom.
Advance Officer: 1st Lt. Donald McLean.
Regtl. Supply Sgt.
3 privates, drivers—1 "B"—2 "Hq."
1 motorcycle—"B."
1 G. M. C.—"Hq."
1 light car, "Hq." (attached car).
2 clerks—"Hq." Battery.

c. Light Column:

Column Commander: Capt. W. F. Marquat.
Assistant: 1st Lt. W. A. Nelson, 7th C. A.
4 Cadillac searchlight trucks, Btry. "A."
1 Duplex searchlight truck, Btry. "A."
12 G. M. C's. (3 "Hq."—4 "A"—3 "B"—2 "E").
1 White Reconnaissance car, Btry. "A."
2 motorcycles, Btry. "A."
1 light car. ("Hq." Btry.) (attached car).
1 White gas truck, 300 gallons.

d. Heavy Column:

Column commander: Capt. R. T. Chaplin.
Assistants: 1st Lts. I. H. Ritchie, W. B. Merritt.
16 class B trucks, (1 "Hq."—6 "A"—2 "B"—7 "E").

- 2 class B tank trucks, 700 gals. "Hq." Btry.
 12 F. W. D. trucks. (4 "Hq."—8 "B").
 3 Prime Movers, converted class B. Btry. "B."
 1 Prime Mover, Walters, " " "B."
 1 Coleman, 3 ton truck, " " "B."
 1 Coleman, 1½ ton truck, " " "B."
 1 Reo truck, " " "E."
 4 kitchen trailers. (1 "Hq."—1 "A"—1 "B"—1 "E").
 4 water carts, (1 "Hq."—1 "A"—1 "B"—1 "E").
 1 instrument trailer, Btry. "B."
 2 tractor trailers with tractors, " " "B."
 4—3" gun trailers, " " "B."
 1 G. M. C., ambulance, "Hq." (attached).
 1 light car, "Hq." (attached).
 8 motorcycles, (2 "Hq."—4 "B"—2 "E").
- e. *Repair Section.*
 Motor Transport Officer: 1st Lt. P. C. Howe.
 1 F. W. D. MORS "Hq."
 2 class B. (1 E—1 Hq.).
 7 drivers. (2 E—5 Hq.).
 3 mechanics.
- f. *The regimental commander's car will operate independently.*
- g. Upon arrival at Jeffersonville, Ind., a detachment of four officers and 85 enlisted men will proceed to Camp Knox, Kentucky for duty with summer training camps. For details see Annex No. 2, Camp Knox Detachment.
- h. Upon arrival of the regiment at Fort Sheridan a detachment of 1 officer and 35 enlisted men will be dispatched to Chicago to represent the Coast Artillery Corps at the Military Carnival which commences June 21st. Details on this detachment will be published at Fort Sheridan.
3. a. The Regiment will form on Fenwick Road in the order light column, heavy column, repair section with the head of the light column opposite Battery Parrot headed south. The column will be on the road ready to march by 8:30 A.M., 14 May 1930.
- b. Columns will close to one truck length going thru cities under police escort and will open to six truck lengths on the open highway.
- c. Column commanders will make every effort to maintain a rate of march of not less than nine (9) miles per hour. In no case will heavy motor columns exceed a rate of twelve (12) miles per hour.
- d. Columns will not delay their march in order to repair vehicles on the road. When repairs on the road must be made they will be made by the repair section.
4. a. One medical officer with Medical Corps personnel and ambulance will make the march to FORT SHERIDAN. The ambulance will normally march at the rear of the heavy column.
- b. First Aid station will be at the rear of the heavy column on the march and a Prophylactic and First Aid station will be established at each night halt.
- c. Casualties and sick of the column will be evacuated to the nearest U. S. hospital. In serious emergency cases they will be taken to the nearest hospital. The ambulance will not leave the column without authority of the surgeon or regimental commander.
- d. For administrative and supply details see Annex No. 1 Administrative Order to Field Order No. 2.
5. Regimental Headquarters will close at FORT MONROE, VA., at 9:00 A. M., 14 May 30 and open at FORT EUSTIS, VA., at 12:00 noon 14 May 30.
- CUNNINGHAM,
Major.
- OFFICIAL:
S-3
- Annex: 1 Administrative Order (omitted)
2 Knox Detail (omitted)
- DIST: (omitted)



61st Officers in Camp at Lagrange, Ill.

Tracers versus Sights

Major G. B. Robison, Coast Artillery Corps

WHEN one attempts to write upon a subject about which there is some honest difference of opinion, it is desirable to avoid at least those arguments which may arise solely out of a misunderstanding of the scope of the remarks. The discussion below pertains to caliber .30 and .50 anti-aircraft machine guns; to the first because it is the target practice weapon, and to the second because it is the standard equipment. It should not be extended by inference to any other type of anti-aircraft machine gun.

There is yet plenty of room within these narrow limits for the differences of opinion mentioned above. Our present purpose is to scrutinize some of the differences in regard to the proper method of fire control for these two weapons in the light of the most recent information available. It is practically impossible to study such material, to have been directly concerned with the firing of hundreds of thousands of rounds of such ammunition under widely varying test conditions, and not arrive at some definite conclusions. This, in turn, lays one open to the charge of bias in the direction indicated by their nature. Let us admit frankly that this sort of bias exists in the present case. However, it is our earnest intention to make certain assumptions with which all can probably agree, and to examine the apparent advantages and disadvantages of the more general methods. This procedure can be unfair when embarrassing facts are omitted, but an attempt will be made to leave out nothing of apparent significance.

If we were to examine a group photograph of all the officers who have opinions upon the subject, and if they were segregated therein according to their beliefs, we would see at one side those who believe in tracers with visual observation and adjustment by individual gunners; next to them would be the advocates of tracers with control of all guns by the officer of the unit using either direct visual or (more probably) stereoscopic observation; still farther along would be the "stout fellas" devoted to sights plus tracers for adjustment; and lastly, at the other extreme end, a possible few proponents of sights and no tracers.

The strengths of these groups can not be stated and it is a matter difficult to subject to estimation. It seems extremely unlikely however that there are more than very few who would exclude the use of tracers entirely. On the other hand there are two strong reasons why there should be a large proportion who believe in the combined use of tracers and sights. These reasons are that such a method can be well adapted to target practice conditions, particularly as they have existed in the past; and that it is the method contem-

plated in TR 435-210. These regulations were written nearly seven years ago. In view of the developments which have occurred subsequently, it is probably no exaggeration to say that these regulations are obsolete, but since they have not yet been revised their influence is still effective. It should be noted in passing that they do not prohibit the use of other methods of fire control.

The number of officers in the purely tracer group is again more uncertain, although it may be said with a fair degree of accuracy that the percentage is high among the number of those who have been concerned with the firing of these guns in the Aberdeen exercises, where both sights and tracers have been subjected to rigid tests, and where the latest and best materiel and ammunition has been available.

It is appropriate to devote some attention to the tracer and its development, at this point. It is rather generous to say that caliber .30 tracers produced before about 1924 were poor. The range to the average burn-out point was only about 600 yards, but the shortness of this range was made much more serious by the large percentage which failed to trace, the wide variation in range of those which did, and the wild dispersion. It is perhaps needless to mention that the short and uncertain range to burn-out point introduced the complicated problem of proper lead for targets beyond that point.¹ But it is necessary to add that the visibility of those tracers that worked was poor and that there was no standardization of color, white, red, and green being used rather indiscriminately. The caliber .50 tracer was still worse, as it had the further disadvantage of producing a great number of floaters, that is, rounds from which the compound expelled itself and, continuing to burn, seemed to float in the air. Actually, of course, it fell toward the ground, but the relatively low velocity compared to that of a perfectly working round was responsible for the effect.

Progress in the manufacture of tracers since that date compares favorably with the advance in the caliber .30 ball ammunition which, with a bullet 15 per cent heavier, carries nearly twice as far, with a flatter trajectory and a smaller dispersion at a given range. Probably the most essential characteristic of a tracer is its visibility. The new caliber .30 and .50 tracers can be seen to service ranges except under the most adverse condition of shooting directly into the sun; and this condition is bad for all systems. It is difficult but not impractical to observe these tracers against a light gray cloud background in the daytime. Under all other conditions the visibility seems to leave little to be desired. The color has been standardized as red. True floaters are so rare as to be curiosity. A similar effect from a different cause arises when a

¹ For a further discussion of this matter, see pages 214-215 of the September, 1930, Coast Artillery Journal.

barrel suddenly loses its accuracy life during firing. Blinds (when there is a total failure to function) and partial blinds (when only the igniter burns) have been reduced to a negligible percentage. The range to the burn-out point of the new tracers is not absolutely uniform, but the extreme plus and minus variations from the average rarely exceeds 75 yards. Furthermore, the tracing range of the caliber .50 ammunition is almost certainly greater than that of any firing which is likely to occur under war conditions. This eliminates the blind lead problem for this caliber. The tracer range of the new caliber .30 ammunition is only slightly short of the maximum average slant ranges of recent target practices. Tracer dispersion at firing ranges is only slightly greater than that of ball for both calibers. The ball and tracer trajectories are not identical, but the divergence is small over the firing range. The caliber .30 tracer passes about four mils above the 1906 ball at 1,000 yards, and there is a similar divergence of one mil at 1,500 yards between the caliber .50 tracer and the 1923 ball. To summarize, it may fairly be said that the latest tracers do everything which may reasonably be expected from an excellent tracer.²

It is now necessary to make an assumption as a basis for further discussion. It is assumed that the primary purpose of the target practice is to demonstrate fitness to perform the firing mission in war. This instantly brings us face to face with two serious difficulties. As everyone knows, it is impossible to duplicate in target practice all the conditions of an actual engagement. Likewise, there is no absolute standard of measurement of such fitness. The scoring formula used to remedy the lack is purely arbitrary, has been changed in the past and may be changed again. Whether past or present scoring formulae are good or bad is not a matter which will be discussed here except to the extent to which they apply to fire control methods. This must be considered in conjunction with the divergence between target practice and actual conditions.

For safety reasons, targets are fired upon in a restricted area; courses must be flown within sharply defined limits; and the sleeve is rarely at an altitude of less than 1,000 feet. There is no element of surprise in the target practice attack; maneuvering is limited practically to slight changes in speed; there is almost unlimited time to make such measurements as may be desired. There are other factors of subsidiary importance which need not be considered here.

The battery commander shoots to make the best possible score without violating the conditions laid down. It would seem that he is not only wholly within his rights in making such an attempt, but doing the proper thing so long as we regard the formula as a measure of firing efficiency, as we do. Past formulas intentionally or unintentionally permitted certain things which were too obviously an unnecessary violation of actual service conditions. A new formula is about to be used which was designed to correct some of the violations.

The important thing to be emphasized now is that it will not compensate for the necessary violations of service conditions which result from safety considerations, from surprise, or from time limitations, unless modified.

Of course no one can say with absolute finality what future conditions will be. It is highly probable that there can be little opposition to the assumptions that the attack can usually come from any (and not a highly restricted) direction and that there will be some degree of surprise. However small the amount of surprise, at least it will be greater than the zero amount in target practice. There is apt to be more opposition to the assumption that the usual attack will come at an altitude lower than 500 feet, and frequently at hedge-hopping heights. Yet this assumption will be made because it can be done, has occurred in tactical exercises, is standard practice in the air forces of several governments, and because there are excellent reasons for attacking at such altitudes. The range at which a plane can be seen or heard when hedge-hopping is a variable that depends upon a number of things, but it will rarely be so great as a mile. Tests conducted (Aberdeen, 1929) over flat terrain with some trees and bushes, visibility excellent, disclosed that in four attacks with two planes, the maximum range of discovery in the eight cases was not over 1,200 yards. The speed is likely to be more than 150 miles per hour, and the distance from the point of discovery to the guns can be covered in 20 seconds or perhaps considerably less. These targets seem usually to be discovered by sight and not hearing, as the audible range of a low-flying plane is very short.

There must be many possible combinations in a sight for it to meet the various conditions which arise. A selection must be made for each specific case, which will depend mainly upon the suddenly appearing, fast moving plane, its angle of approach, speed, altitude, and angular height. If and when the slant range is necessary, it can be measured or obtained from the altitude and angular height. The angle of approach may be estimated quickly after discovery. This determines which data elements will be used. If the air speed is assumed as normal, which may not be the case, it should be corrected for wind if there is much. If the ground speed is measured, the measuring instrument must be "on target" for several seconds, and it takes several besides to get on. Altimeters, range finders, and the angular height instrument must be brought on target also (or several of them at least) and their readings used to determine the necessary final data. This information must be communicated to the gunners, above the noise of the now close target, and set visually or otherwise by them. If, by the time all this has been done, the plane is not already overhead, at least the 20 or fewer theoretical seconds available have been seriously reduced. When the plane passes over the position it is necessary to cease fire and between 10 and 15 seconds will elapse before the guns can be swung

²The statements above relating to tracers are based upon the records of official tests. Specific figures and details have not been given in all cases but they are obtainable by those officially concerned.—G. E. R.

around and fire again be brought to bear upon it. The report of the test referred to above (1929 Aberdeen Exercises) states, "The tests demonstrated conclusively the utter uselessness of any range instruments in connection with the operation of an antiaircraft machine gun platoon against attack aviation operations." And further, "It is plain that any system which requires, in determining firing data, more than 50 per cent of the time available to fire is totally unsuited to the requirements of an action which is measured by seconds rather than minutes."

There are other aspects of the matter. When an attack can come from any direction, the guns of a platoon may not be placed in line, as seems customary in target practice, otherwise there will be poorly defended sectors. A square or diamond formation provides an all-round defense with the possibility of bringing three or four guns to bear on a target coming from any direction, and all four if the plane is high enough. Furthermore, it is distinctly possible to have two or more planes attacking simultaneously from different directions. Any proposed data finding system starts to go to pieces when two targets appear at once from different directions, to say nothing of the predicament of the unit commander who has to split his unit or neglect a serious menace completely.

Lastly, the purpose of all sights used in conjunction with tracers is to provide a guide to the gunners so that they may *open* fire with the proper lead. *Adjustment* is from the observation of the tracers. But gunners can be trained to estimate the leads with reasonable success and certainly can bring their fire to bear faster, even after a faulty opening, than can be achieved by waiting for data. Gunners must make their own adjustment from their own observation of their tracers, as otherwise it seems necessary only to ask how an officer can adjust fire on two separate targets at the same time.

It has been demonstrated that sights may be used with great success under past target practice conditions. No belittling of past achievement is intended when it is intimated that this success is possible solely because of the existing differences between target practice and war conditions. The opportunity exists in target practice to place the guns in an artificial position, to be concerned with only one target, and to have plenty of time to make all the desired measurements and settings *before* the target reaches the firing sector.

Furthermore, it is likely that the course is straight and the speed and altitude constant. It is unquestionably proper for the battery commander to take advantage of this situation so long as permitted, but it seems regrettable that so much able endeavor should be expended upon a method which would probably be discarded after the first actual attack, if not before. It is practical to place a time limit of 15 or 20 seconds upon all operations of the target practice action. If everything from "alert" to "end of course" were kept within such a limit, the efforts to develop a useful sight system would be forced into more practical channels. This can, and it is believed should, be done.

It may be contended with truth that our example has been chosen to present the worst possible condition of minimum time available. It is firmly believed however, that a plurality of solutions is bad if avoidable, and that the accepted method should be that most suitable for the worst possible situation. Also, while the time is shortest, the presentation is best. Presumably it will be unusual for attack aviation deliberately to attack antiaircraft machine guns, although it might happen. Thus, to obtain the best presentation the defending guns should be placed so that enemy planes, to reach their probable objective, must fly into and over the defending unit. It may now be apparent that the illustrative example has not been chosen without a strong reason. It can not be expected that planes will be subject to fire for much longer periods on crossing courses since the pilot will take advantage of all natural cover and the possibilities of maneuver.

Let us turn now to the use of modern tracers. The ranges will be such that, for caliber .50 ammunition, the trajectories of ball and tracers may be treated as identical; there will be no blind lead; fire may be opened the instant the gunner has his piece trained; he can unquestionably hit quickly, bounteously, and with reliability at such ranges and in the time which may be expected to be available. The system is perfectly flexible and may be employed with equal facility against several simultaneously appearing targets, as each gun has a primary sector to defend. To conclude, we shall quote once more from the 1929 Aberdeen Report, "The only method of fire practically applicable for use against low-flying attack aviation is that in which the machine guns are controlled by the individual gunners using tracer observation to assist in pointing."

New Regimental Infantry War-Strength Organization

THE new organization increases the number of automatic rifles in the squad from one to two, the number of caliber .30 machine guns in the battalion machine gun company from 12 to 16, and adds a regimental machine gun company of 15 caliber .30 machine guns. The howitzer company has been replaced by the newly-created cannon company in which the number of 37-mm guns and 75-mm Infantry mortars have been increased from 3 to 8.

The new organization has for its objective increase in fire-power and flexibility, utilizing our present standardized weapons and equipment, with a minimum increase in personnel.

Industry and National Defense

Major General George Van Horn Moseley, U. S. A.

TWO million dollars an hour—that was the sum being spent by the American government during the closing months of the World War. In the aggregate the United States spent twenty-two billion dollars during its nineteen months of active participation in the conflict. That amount approximately equalled the total prior disbursements of the government in the 140 years of its existence, including the expenses of all previous wars. Modern war is an expensive business, even for the apparent victor. It is worse; it is a grim and costly tragedy exacting always a frightful toll in material wastage and in human suffering and sacrifice.

To contemplate the furthering of any national policy through an appeal to arms is today almost inconceivable. Yet, without exception, civilized nations devote a considerable portion of their annual revenues to the maintaining of organizations which would be valueless of the conception of war and conflict could be abolished. This is accounted for by the fact that situations can and do arise under which the possession of military and naval units may be vital to the nation's best interests, and perhaps even to its continued existence. Such a situation may confront the most peace-loving of peoples. In November, 1916, a majority of American voters gave their hearty support to a policy that had kept us out of the European war. A scant five months later the President, with the enthusiastic approval of the mass of our citizens, recommended to the Congress that war be declared against the Imperial German Government, stating, "We enter this war only where we are clearly forced into it because there are no other means of protecting our rights."

Our own theory of national defense is based upon the maintenance of the minimum force that will insure our safety in an emergency until the full strength of the nation can be developed. The development of the nation's complete strength, under our system, would necessarily require considerable time after the beginning of a war. The shorter we can make this period, the smaller can be our peace time establishments, and the less will we have to dig into our pockets to pay for national safety insurance.

To understand the task facing us during such a preparatory period, it is first necessary to grasp clearly the nature of modern warfare. Since the invention of gunpowder, the superiority of the missile over the sword, the spear, and other cutting weapons has continuously increased. Every contrivance that has materially speeded up the rate of throwing bullets and shells at the enemy has been eagerly seized upon by military commanders. But every gain in this respect has served to tie armies more and more closely to supply bases and to ammunition factories. Moreover, huge modern armies cannot subsist on the prod-

ucts of the country in which they operate as did the smaller forces of bygone times, but must depend upon food and supplies brought up from the homeland. A military commander today could not possibly emulate Hannibal's example in marching boldly into the heart of the enemy's territory and there, completely cut off from his own country, campaign successfully for years. A modern force attempting it would quickly be destroyed. An army may be visualized as a gigantic and insatiable consumer of munitions—food, clothing, ammunition, weapons, and a thousand other items that are essential to effectiveness in combat. These, generally speaking, must be produced in the home country and forwarded to the fighting front. Failure in the industrial program, or in the transportation systems connecting the army with its source of supply, would inevitably mean defeat for the army.

Any nation, faced with the prospect of taking up arms against a major power, must develop its acres and gear its factories to emergency needs. She must look as anxiously to her ability to produce war munitions as she does to the ability of her armies and navies to use them effectively. Contrast with Hannibal's Italian campaign the experience of the British army in France during the World War. Automatic weapons, big guns, airplanes, gas appliances, tanks, bombs, and thousands of tons of ammunition were but a few of the items used daily on the battle front. To meet the needs of the British forces, and to keep them constantly in condition to fight during a war lasting four years, taxed the industrial capacity of Great Britain to the utmost. Dependent as she is upon foreign commerce, she would have collapsed quickly if her battle fleet and merchant marine had not kept the markets of the neutral world constantly accessible to her. The Germans clearly appreciated this fact. The basic objective of their whole submarine campaign was to disrupt the economic life of Great Britain and thus force her withdrawal from the war. The extraordinary and heroic efforts made by Great Britain to combat this menace had their inspiration in the grim necessities of the moment, and her bitterly won success in preserving her sea communications was a vital phase in the operations that led to the eventual victory of the allies. Due to the continuous drain upon England's economic life, her leaders quickly learned the necessity for exercising a highly centralized control over all the resources of the nation. Before the end was reached, England, and indeed all the other large countries of Europe were, in effect, huge industrial organizations engaged primarily in producing the material things absolutely necessary to support the fighting forces and the civil populations.

The task of producing munitions, great as it is, is not the complete story of the contributions that in-

dustry must make to a nation at war. Since a well organized, smoothly running industrial machine is essential to each belligerent, it follows that the destruction of that machine will be a legitimate objective of its opponent. As previously noted, Germany attempted to disrupt England's industrial life by the use of submarines and aircraft, the only tools permitted to her by her circumscribed position. But the allies, in addition to the well-nigh continuous band of steel with which they surrounded the Central Powers, employed other effective weapons. Neutral countries on the borders of Germany were inviolate to Allied military operations. They soon discovered, however, that England and France held a powerful weapon in their ability to control the flow of some of the material things upon which the life of the neutrals depended. When the United States joined the list of nations arrayed against the Central Powers, this control became almost absolute. Trans-shipments to the Central Powers practically ceased, and the gradual economic strangulation of the Central Powers had a profound effect on the outcome of the war. For themselves, the allies obtained essential items from neutrals through the threat of withholding other items necessary to the welfare of the neutral concerned. Thus, in this day and time, the economic factors may wield as effective an influence upon an enemy as can the armed forces themselves. President Wilson expressed this idea, when he said: "Modern wars are not won by mere numbers. They are not won by mere enthusiasm. They are not won by mere national spirit. They are won by the scientific conduct of war, *the scientific application of industrial forces.*"

The term "Nation in Arms" expresses succinctly the thought that every man, every dollar, and every material thing should contribute its full share to make possible the successful conduct of the war. We recognize that every individual should bear his or her burden in the conflict, be it with a gun, a plough, a loom, a lathe, or the humble kitchen stove. Sacrifice for the common good should be uniform and universal, and no class should benefit at the expense of other classes.

Generalizations are easy to make, and make them we do, in spite of the fact that a shrewd old cynic once told us, "All generalizations are false, including this one." Nevertheless, the generalizations that appear above express an aim toward which we should strive. The real test is to evolve methods for the attainment of that aim.

To accomplish all that is implied by the "Nation in Arms" is a task of herculean proportions. Our 122,000,000 people have a national heritage of nearly two billion acres. Our estimated wealth is 400 billion dollars, represented by money, factories and other facilities, land, and raw materials. In the event of war these diverse, often competitive, elements must be quickly shaped into an orderly organization and directed toward the accomplishment of the common purpose.

Before the World War, Germany had not entirely failed to appreciate the necessity for industrial as well

as purely military preparations, and had accomplished a great deal along this line. For instance, Germany's railway systems had been so located as to facilitate the mobilization and concentration of troops and supplies in the event of war, rather than solely to meet its transportation needs in peace.

In peace such things are far more easily accomplished under an autocracy than under a more liberal form of government. Once war has actually been declared, however, a democracy such as ours enjoys a great advantage over an autocracy in rallying the individual wealth and efforts of the people to its support. "The highest and best form of efficiency is the spontaneous cooperation of a free people." An autocratic government might succeed in forcing its subjects to fight against their will, consequently the desired spontaneous cooperation would be lacking. On the other hand, the United States could scarcely be plunged into a major conflict except upon the insistence of the majority of its citizens. The wave of popular feeling that would force our nation into war would inspire also each individual to make unusual sacrifices to serve the needs of his country.

Fortunately, also, this country is more nearly self-sustaining economically than is any other great nation. We have huge and efficient manufacturing facilities, and a strong financial system. Except for a few vital items such as rubber, tin, manganese, and several others, all raw materials essential to us in war are found either within our borders or in such close proximity as to insure access to them under any conditions that are likely to exist.

In view of these facts we can always count with reasonable certainty upon the things that President Wilson pointed out as insufficient within themselves—numbers (both men and material), national spirit, and enthusiasm. These are the factors which, intelligently directed, make possible the realization of the ones he set up as the decisive elements, namely, the scientific conduct of war, *and the scientific application of industrial forces.*

When we express our problem in such terms as "the scientific application of industrial forces," we are still talking in generalities, still seeking a solid foundation for the structure we hope to erect. Let us then approach it in this way. We have the industrial forces: we want them to produce the vast quantities of munitions without which modern armies and navies are powerless. Why is this particular problem so difficult to solve?

Primarily, it is the time factor that lifts this whole matter out of the realm of ordinary business transactions. There can be no doubt that American industry could meet all requirements of the Army and the Navy with very little disturbance in its normal procedure if the orders could be placed gradually and spread over an appreciable interval of time. But the opportunity to do this will never exist! When nations go to war, time is vital—to delay is to invite disaster. Large portions of our industry must shift quickly from peace-time operations to the job of producing munitions for the fighting forces.

Usually distinction is made between two great classes of munitions—commercial and non-commercial. Commercial items include all those used in the normal life of the nation, and produced continuously in our country, such as food, automobiles, clothing and other textiles, horses and harness, simple items of mess equipment, shoes, and so on. The second class comprises articles such as ammunition, guns, tanks, fighting planes, gas appliances, uniforms, special vehicles and many others.

The procurement of the first class is a relatively simple matter. In certain cases production must be gradually accelerated, products must be altered slightly to meet the specific needs, and procurement of necessary raw materials must be assured. All these difficulties appear in aggravated form in the production of non-commercial items, so that no further mention need be made of commercial items.

Procurement of guns, ammunition, and other non-commercial items, is a question of far more serious import. Assuming that the Army and the Navy will, upon the declaration of war, know the approximate quantities and types of munitions necessary—an assumption justified by the zealous and detailed attention now being given this matter in those services—the problem narrows itself down to the organization of industry to supply these particular needs.

Procurement involves a consideration of several essential elements. They are raw materials, transportation, factories, power, labor, and finance.

For instance, consider a simple artillery shell, made principally of steel, brass, and copper. Its production involves first the procurement of pig iron, which must be processed through a blast furnace supplied with coke, lime, and manganese. The coke involves the mining of bituminous coal and passing it through coke ovens. The manganese must be imported from South America. The steel must then go through a plant where it is forged, machined, and equipped with a firing mechanism. The copper in the shell, obtained in a different place, is extracted and refined under entirely different methods. After the powder has gone through a similarly complicated and intricate process, all elements are shipped to a plant where they are finally assembled into a completed shell.

The flow of all these raw materials must be continuous and uniform, and if the supply of any one promises to be inadequate, we must find a substitute for it, or other sources where it may be obtained. Adequate transportation facilities are essential, for even the most favored spot on earth does not contain all the necessary elements for the production of a piece of steel. Every industrial facility performing a function in the whole chain of these operations must be assured of power, labor, and adequate financial support. Some of the factories must be converted from other uses, since in our country no commercial plants are engaged in the peace-time production of artillery ammunition. This task in itself is an intricate one. Very recently the executives of an automobile plant, popularly credited with being the most efficient in-

stitution of the kind in America, decided to re-design the model of the car they produced. Their product was not changed from an automobile to a shell—it was simply a change in the type of the car to be marketed. Yet, with all plans carefully worked out months in advance, that factory, at an expenditure of millions of dollars, required a full year before it was again producing automobiles in marketable quantities.



Bessemer Converter in Action, Lackawanna Steel Company

Suppose, that without warning, the same factory had been asked by the Government to begin the quantity production of artillery ammunition. How much time would have elapsed before completed shells would have been ready to serve the needs of the fighting forces?

Thus, a single requirement of the fighting forces—a shell—involves many ramifications of industry, and the production of some of its component parts occasions radical changes in equipment and procedure. Consequently, it is not difficult to understand that when we engage in the simultaneous production of thousands of items of equal importance, overlapping and interference will occur in marshalling to the proper points, at the proper times, the essential elements of production.

Moreover, while industry is attempting to adjust itself to this strain, it must continue to supply the necessities of the civilian population. The industrial machine of this great country has been designed and geared to a certain speed to meet the demands made upon it in normal times. The war load must be distributed judiciously, so as to avoid inefficiency, delay and possible disaster.

The Second article of this Series will appear next month.

Army-Navy Joint Exercises Harbor Defenses Of San Francisco

By Capt. F. S. Swett, C. A. C.

IT is difficult to write an account of this sort in a style that will induce the reader to venture beyond the title. In accordance with the JOURNAL's firm intention to make its subscribers peruse every article to the last thrilling period, the following feeble attempt in support of that most worthy ambition represents several weeks of mental strain and is the button left in the crucible after reams of good government stationery have been consumed as flux. I had AN account on the road to completion but on reading it over one morning after a long evening spent in a bully romp from Tait's to Coffee Dan's it had the same amount of "IT" as last night's unwashed dinner dishes. You may not like this either but consider yourselves lucky—not many are required to read the formal report. Man, that was a package! One copy weighed six pounds and seven ounces including the ink on the title page but not the Acco fastener.

Somebody discovered a few dollars of unobligated funds last fall and thought it might as well be spent in one of these here new Army-Navy joint brawls. Since San Francisco was a long ways from Washington they wished it on us, probably figuring that Colonel Jawn Geary's sense of humor was still operating. The time of the festivities was set to 1400 hours (that's 2:00 P.M., Bulova—spelled B*U*I*O*V*A—watch time) August 14 and those who were still awake might watch the battle wagons effect the runby "sometime on the morning" of August 16. The Admiral whispered to the Plans and Training Officer that he admitted being partial to high tides so with the able assistance of the Band Leader in translating the tide table, the latter figured that he would eat breakfast at home. (Blue Umpire please note.)

The Secretary of the Navy certainly gave us something at which to shoot. The "Black" fleet consisted of eight battleships (Texas, Oklahoma, Idaho, Nevada, Maryland, New Mexico, New York, and Tennessee), the three plane carriers (Lexington, Saratoga, and the Langley), the cruiser Omaha, and twenty-four destroyers. And they called it a minor exercise!

The War Department asked us to prove several points, the first of which was that the Army and the Navy could work together in the same county without committing anything worse than the milder forms of mayhem, in other words, to test cooperation and joint action between the two forces. Let me pay warm tribute to the Commandant of the Twelfth Naval District, his forces, and their heirs forever—the spirit of cooperation and cordial support may well serve as an example for which others may strive in future exercises of real action.

Paramount interest was vested in the Army and the way the Twelfth Naval District came thru with support was like getting money from home. Really it was splendid. Everybody was calling each other by their nicknames in the third conference, and it was thru the numberless conferences that success was attained. The proximity of the two headquarters permitted of frequent personal contact; we were talking the same language in no time, and agreements were reached and difficulties eliminated most expeditiously.

Another main objective was the attainment of cooperation between the defending air and antiaircraft forces. *There* was a homely elder daughter to marry off, if you get what I mean. Yeh, we had planes—buckets of them. We made a pass at this target, and did fairly well but not well enough. It was demonstrated most clearly that this problem must be worked out in greater detail and with more exacting care than any other phase of such exercises. We knew our own planes and where they were, their times and lanes of departure and the same for their anticipated return. That isn't enough but it is about as much as can be done in peace time when conflicting training programs forbid extensive cooperative maneuvers prior to Army-Navy joint exercises. We encountered difficulties in the limitations of the radio operating frequencies of the plane sets. On one occasion we tried to shoot down one of our own planes. (One might as well be honest about these things since the purpose of such maneuvers is to show up errors so they may be eliminated in the future). Other difficulties were encountered but the two forces in question functioned mighty well in spite of their troubles. Things happen so rapidly with those boys that split second judgment has to be taken whether the one holding the sack likes it or not, and he has but one chance in two of being right.

The organization of the various arms assigned to the Harbor Defenses is believed to be worthy of your consideration. It may appear to be cumbersome but it proved itself in this exercise to be quite the contrary; it was effective—it worked. The Harbor Defense Commander had assigned to his command seacoast artillery, antiaircraft artillery, and Air Corps. Under the principle of paramount interest he was charged with coordinating Army efforts with the forces of the Twelfth Naval District. The Inshore Patrol had its headquarters and commander in this headquarters. There was a job of work, mister.

We handled the seacoast artillery department in a manner that caused departed Coast Artillerymen to roll over in their coffins and thump the lids. We will censor

the exact list of armament in the Harbor Defenses and let it go with saying that it is distributed over an area roughly nine miles long and three miles wide. The channels of approach, water areas, and average conditions of visibility, necessitate division into three groupments. Upon these and above considerations was based the decision to place this arm under the direct command of the second senior officer in the Harbor Defenses, to call him the Seaward Defense Commander, and to put the sea scrap up to him. It is firmly believed that seacoast artillery, antiaircraft artillery, an air force, supporting mobile troops, and coordination with friendly naval forces, to say nothing of administrative problems, form an aggregate of responsibility which will require the maximum effort and attention of the Harbor Defense Commander and which absolutely forbids his ever taking personal command of the sea phase of any action. The occurrences thruout the exercises bore out this contention very forcibly, as anyone who viewed the action at the Harbor Defense Command Post will testify. The inference is contained in TR 435-300 that the Harbor Defense Commander should take over direct command of the seacoast elements under some circumstances.

This appears to be inadvisable with respect to the larger harbor defenses. A naval commander who undertakes to engage fixed seacoast defenses will come well provided with combatants of all arms, and will have the Harbor Defense Commander in the well known situation of the one armed paper hanger with the hives, otherwise he won't dare attack. It is contended that the day of the pure naval attack of shore defenses unsupported by other arms is past, and the job of the Harbor Defense Commander has evolved in accordance.

The exercises included the test of an antiaircraft intelligence platoon which was disposed in observing details on a twenty-five mile arc in the vicinity of Santa Cruz, approximately seventy miles in a direct line from Fort Winfield Scott. Its mission was to alert the Air Force and the antiaircraft command on the approach of enemy planes. This outfit justified its existence by furnishing warnings of all approaches, the shortest one being thirty-eight minutes and the longest one forty-two minutes. The time in all cases was ample to alert all antiaircraft elements, and to afford the Air Force time to disperse to separated fields or to take the air and gain sufficient altitude for aerial combat.

All hail, cheerio, and pip pip to our Air Force! It was a composite force AND HOW! Rockwell Field contributed seven bombers and sixteen pursuit planes. Crissy Field chipped in five observation planes. The Marine Corps sent us six pursuit and five observation planes from San Diego. Believe it or not, this force was assembled at Mills Field, San Francisco, the afternoon before hostilities commenced, and with no opportunity whatsoever for preliminary work to weld the elements into a cohesive force, the boys stepped into formation and delivered the goods as tho they had been working together for months. Who said the Air

Corps couldn't cooperate? Their force was hopelessly outnumbered by the enemy, and the Air Force Commander shaped his plan of action accordingly. He scattered his forces about the numerous fields within reasonable reach of San Francisco affording the enemy slight chance of locating more than a minimum number of them. We had figured that "Black" would initiate his offense with an air attack in full force, and our estimate hit the nail squarely on the head. We knew that in the face of his overwhelming superiority we could do nothing but accept it, conserving our planes, and giving him all the steel and lead that the antiaircraft armament could put out. Our plan of offense was based on the simple plan that having laid his eggs he would have to go home, and with his depleted supply of gas he wouldn't be able to stop to pick many daisies on the way. We would ride his tail, at a respectful distance, back to the carriers and catch him at a most embarrassing moment—when his planes were landing on the carriers, and catch birds and nests at the same time. Simple, what? If you know of a better plan, let's have it. Well, "Black" made his air attack and it was a wow. He discovered one of our planes. One "Black" plane had the effrontery to dive so low that the blast of a blank from an antiaircraft gun rocked him over on his side. To our great glee, a Crissy Field plane on a routine reconnaissance located the plane carriers in Monterey Bay, and "Blue" plane motors began to pop. The "Black" air force performed a brilliant maneuver in withdrawing from the attack. The planes dispersed to the four winds, even feinting a landing far to the north, in the attempt to conceal the true location of the carriers. It was beautiful work, well planned and well executed. In view of our knowledge and plan of offense it did not work, but might have under other circumstances. The "Blue" planes succeeded in bombing the three plane carriers. The "Blue" Air Force performed another difficult mission during the early morning hours of the second day of the exercises when the planes slipped thru to rendezvous over the Farallon Islands and bombed the Battle Fleet which was approaching the coast to bombard the shore defenses. The mission was executed in a very able manner, and without opposition from the "Black" planes which were proceeding thru other channels to raid the shore defenses and spot for the battleships during the bombardment. The field leader demonstrated his ability and resourcefulness again when he slipped around the northern flank and attacked the "Black" battleships that were bombarding the shore defenses from medium range early in the afternoon of the same day. The Air Force had burned up all the money allotted for their operations by this time, thus curtailing further air activities on our part.

The Inshore Patrol consisted of a naval tug and four Coast Guard vessels. There was no objection on the part of the rum runners. In accordance with the suggestion of the Joint Board, the Inshore Patrol Commander established his headquarters in the same building as the Harbor Defense Command Post. This

element performed excellent service; nothing slipped by them.

We had an Offshore Patrol that was AN offshore patrol—three V type and two S type submarines, six destroyers, and six seaplanes. It was commanded from the V2, believed to be the first time that such a force has ever been handled from a submarine. Nothing was too difficult for that crowd. They gained contact with the light forces that were on their way to the fleet rendezvous; they picked up the Battle Fleet one hundred and fifty miles from San Francisco; they attacked everything where they stood any chance of delivering a blow, and when the opportunity was unfavorable for striking, they hung on the trail waiting for a chance and supplying invaluable intelligence. Their results demonstrated what can be accomplished by an able and aggressive commander with an efficient operating force. It must be remembered, however, that we can never expect to have such a force under conditions of actual service since all vessels would operate directly with the United States Fleet.

With the receipt of detailed information as to the varied forces that would be available to the Harbor Defense Commander for the conduct of his side of the exercises, it was quite apparent that the solution of the many phases of communications would dictate the success or failure of the exercises. It was in connection with this part of the exercises that the absolute necessity of very close cooperation among all elements of our army and navy forces became manifest. It may be generally stated that a remarkable degree of success with communications was attained. It was almost too good to be true. There were weaknesses but they were of comparatively small importance. There were many miles of leased commercial telephone lines. The radio situation was most complex with planes, ships, and shore stations operating nets that could not interfere with each other, with radio compass stations, with other stations aiding navigation, and with the commercial broadcasting stations. The naval elements were well equipped with sets which would carry the load, but allow me to state that our technicians performed wonders with the limited number of efficient Army sets and the obsolete mess of junk that had to be altered to complete the equipment. Don't forget that Coast Guard stations and lighthouses up and down the coast were responding to the invitation to supply intelligence. The Harbor Defense Command Post was the tank to which all information was ultimately piped, and your tactical knowledge should appreciate that much of it had to flow laterally at the same time. Did the system of communications work? Let me answer by stating that every echelon was in immediate and complete touch with the entire existing situation from ten hours before hostilities commenced up to and including the broadcast by the umpires that the exercises were completed.

We must not lose sight of the fact that the situations thrust upon the Navy (Black) were highly artificial and not of their choosing. The Commander in Chief of the Battle Fleet came ashore sometime before the

exercises and asked, "What does the Army wish us to do?" The Army told him, and he proceeded to comply with the expressed requests exactly as specified. He launched his air attacks with the carriers in sight of shore, being forced to consider the safety of his pilots as of primary importance in peacetime maneuvers, and to comply with our request to test the operation of our antiaircraft intelligence platoon near Santa Cruz. His exposure of his capital ships simulating a medium range bombardment was done in order to give our batteries the opportunity to track and simulate action against actual war vessels. The necessity to curtail the expenditure of fuel caused him to restrict his action to limited areas, and in some cases to direct destroyers to drop anchor within reach of our guns between phases. It is appreciated that high artificiality cannot be obviated in joint exercises.

The exercises brought many points to light, the most important of which are listed below:

(a) The test of our system of tactical control demonstrated that it is a sound and efficient system. The grouping of commanders of the various arms at the Harbor Defense Command Post in close personal touch with the Harbor Defense Commander resulted in excellent coordination and teamwork. The direct personal communication between Operations Officers and Intelligence Officers resulted in rapid and efficient operation which is so vital in the accomplishment of the mission specified in such a complex maneuver.

(b) The establishment of the Harbor Defense Command Post in a comparatively retired position, and the relieving of the Harbor Defense Commander from direct supervision over the naval phases of the action, were proven to be sound tactics and correct procedure.

(c) The successful conduct of such exercises is entirely dependent upon complete and sympathetic cooperation between all forces engaged. The degree of this cooperation between our various arms, and of all of them with the Harbor Defense was superlative.

(d) Great inferiority of force does not eliminate a leader from accomplishing important results. This was clearly demonstrated by the aggressive and efficient action of the commanders of the "Blue" Air Force and of the Offshore Patrol in grasping fleeting opportunities, and in the results which they attained.

(e) Offensive air action launched from naval carriers is attended with great risks even tho effected with greatly superior strength. It is doubtful if any commander will dare to bring his carriers nearer than one hundred and fifty miles from the coast line unless he holds part of that coast. With the flying deck of a carrier as vulnerable as it is, one plane slipping thru the aerial defense covering that carrier can render its flying deck untenable. If its planes are absent at the time, it is easy to imagine the discomfort of the pilots when they return to find themselves unable to land on their floating home.

Also, planes returning to the carriers with depleted supplies of fuel and ammunition may be tailed by smaller forces starting the pursuit with full loads that will be able to effect a serious offensive against the carriers to which the stronger force has been obliged to direct them. Planes operating from land bases have a very marked advantage over planes operating from naval carriers.

(f) Instructions for joint exercises should prescribe definitely the time of beginning with the dispositions permitted. A time was announced for these exercises but it was not stated as to what dispositions could be made prior to that time, whether preliminary reconnaissance could be effected prior to that time, and whether forces were to start from bases at that time or were to be permitted to be in position to act offensively. Some confusion resulted.

(g) Harbor defenses should have observation planes assigned to them and be an integral part of the harbor defense command on the basis of one plane per group, for intelligence and spotting purposes. Air forces in joint action should be under the command of the harbor defense commander, and harbor defense war plans should contain provisions for such an addition to the command.

(h) The cipher device M-94 is too slow for the majority of messages handled in exercises of this nature. Communication with all outlying stations and with the Offshore Patrol should be by simple and rapid code which is changed frequently. There

is no need to use code in communicating with the Inshore Patrol; maximum speed is vital, and the nature of the intelligence will be of little value to the enemy.

(i) The painting of bands on planes is not visible beyond low altitudes, and it does not serve as an efficient means of identification.

(j) Great care must be exercised to distribute radio operating frequencies to prevent congestion. In these exercises, the safety of planes was considered of paramount importance, and in two or three instances the Offshore Patrol was prevented from transmitting intelligence because of congestion of their assigned frequency. It was not discovered why they did not switch to the assigned alternate frequencies to obviate this.

(k) Army plane radio sets are of insufficient power and range.

(l) The Coast Artillery is deficient in modern radio sets which are properly designed to operate on frequencies that are free from commercial interference.

Much more was said in the final report of the exercises, and "them as cares" are urged to motor up to Washington and read the report which is somewhere in the War Department. I have attempted to cover only the high points. It will tickle my vanity if some of you have read this far.

Further deponent sayeth not.



Walter's Truck Pulling Gun from Mud Hole Near Ft. Eustis, Va.

The Nicaragua Canal Survey

Lieutenant Colonel Dan I. Sultan, Corps of Engineers

Commanding U. S. Army Troops in Nicaragua and in Charge
of the Nicaragua Canal Survey

FOR about 100 years following the voyages of Columbus to the Americas, early explorers sought a natural short water passage to the Far East. After all hope of finding a natural strait had been given up, attention was directed to the construction of a canal. England, France, Spain, Holland, and the



Lieutenant Colonel Dan I. Sultan

United States at various times took the lead in advancing the idea and promoting companies to secure concessions. Over a period of years, investigations into the practicability of such a project narrowed the usable sites to a choice between Panama and Nicaragua. Both routes were studied and reported upon numerous times and private corporations started work on each. In 1901 the report of the Walker Board (the Isthmian Canal Commission), appointed by the United States to study the subject of all interoceanic canal routes, chose Nicaragua rather than Panama as the location of any canal to be built by the United States. Its report was subsequently modified to favor the Panama route because the work already done by the French, and the accompanying equipment, supplies, surveys, concessions, and railway, were offered for sale at such a price that the estimated total cost of a canal at Panama was five and a half million dollars less than the cost of a canal at Nicaragua. The money saving argument was too potent to resist at the time the matter was decided. The 1926 traffic figures indicated that the great advantage of the Nicaragua route as compared with Panama was and is the fact that it would save one or two days time for about 80 per cent of the ships that use a canal.

Long before the Panama Canal had been put in operation it was recognized that at some future time the installations at Panama would be insufficient to care for the traffic that would develop. Whether the necessary increase in facilities would take the form of an enlargement of the Panama Canal or the con-

struction of a second canal was left for decision when the need for it should appear. With an eye to eventualities, the United States in 1916 entered into a treaty with Nicaragua (the Bryan-Chamorro Treaty) which provided that in return for \$3,000,000 the United States should have the exclusive rights to build a canal in Nicaragua.

Within the last few years it has become apparent that the time has arrived to decide what shall be the next step taken by the United States to provide passage through Central America for the world's ships. The estimated rate of the growth of traffic through Panama has been far exceeded. The Panama Canal was opened in 1914 but suffered at first from the effects of slides and the great war, so that the world's trade did not begin to flow through it on a large scale until about 1920. Traffic has now reached the amazing figure of 30,000,000 tons annually, variously estimated at from three-fourths to three-fifths of the present practical operating capacity of the canal. It is high



Diamond Drill in Operation at Machuca Damsite

time to consider what steps should be taken to provide additional canal facilities, because from ten to fifteen years will be required to survey, plan, and con-

struct the Nicaragua Canal or to enlarge the Panama Canal.

In 1929 Congress adopted a resolution providing for a new study of the Nicaragua Canal. The President of the United States decided to have the survey made by the Corps of Engineers, U. S. Army, and to use army personnel. Survey personnel arrived in Nicaragua in August and October of the same year. The troops employed are the Headquarters & Service



Gauging the San Juan River

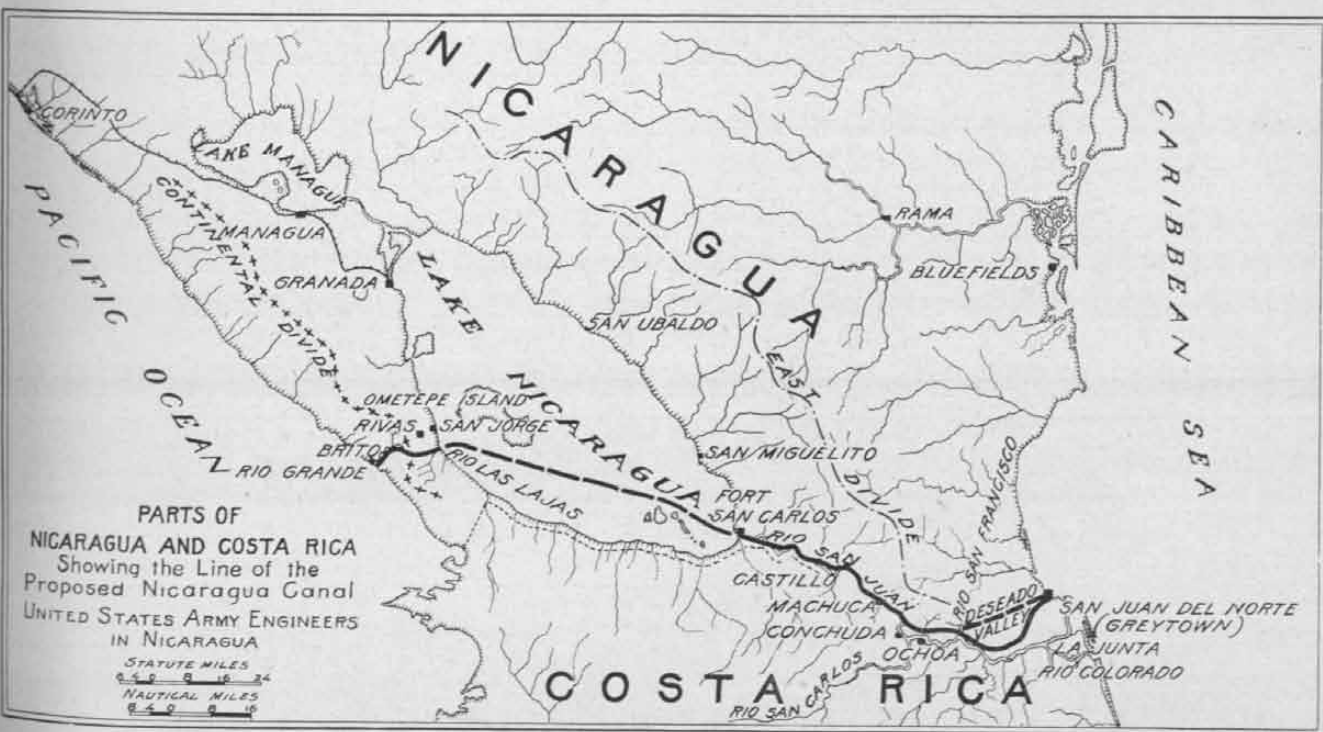
Platoon, 29th Engineers; Company A, 1st Engineers; Company F, 11th Engineers; with medical, quartermaster, signal, and finance detachments.

Starting from Brito on the Pacific Ocean, the Nicaragua Canal will follow generally the Rio Grande to a low ridge (the west divided) and thence down the Las Lajas to its mouth on Lake Nicaragua a few miles south of San Jorge. In this, the Pacific section, the main problems to be studied are the layout and plans for the harbor at Brito, and the location, design, and lifts of the locks. The canal as planned from old surveys is now inadequate. Larger ships and the greatly increased commerce that will use the canal require a larger and better harbor. Locks must be larger

and will require more extensive rock foundations. The time of transit of ships must be reduced in every way consistent with economy in canal construction and with sound engineering. Time is of more importance than it was thirty years ago and each hour's delay caused to shipping today represents a large sum of money. The present problem in the Pacific section is therefore to straighten the canal and to determine the correct location and layout of the locks and terminal harbor. Large areas are being surveyed and much diamond drilling is in progress to determine the adequacy of foundations.

From the vicinity of the mouth of the Las Lajas the canal will cross Lake Nicaragua to Fort San Carlos. Locating the channel in the lake so as to provide safe navigation with minimum dredging and curvature, and designing the lake harbors are the main problems in this sector.

Below Fort San Carlos the canal will follow in general the San Juan River Valley to the vicinity of the main dam. The water level of the lake or reservoir behind the dam must be so regulated as to provide ample water at all times for lockage purposes. During the rainy season enough water must be stored to carry through the next dry season. Sites for such a dam exist between Ochoa and Machuca Rapids, both inclusive. The present problem is to determine the best site. It goes without saying that such a site must have suitable foundations for the huge dam structure that will be necessary. The spillway must be capable of discharging 100,000 second-feet. The lower down the San Juan Valley the dam is located the higher it must be. The nearer to the Caribbean the dam is placed the longer the lake above it will be, and navigation in a deep lake is preferable to navigation in



narrow cuts. In general it may be said also that the farther down the valley the dam is placed or summit level is carried, the smaller will be the amount of excavation between the dam and Greytown. Defense plans require that the dam and the locks must not be in exposed locations. They cannot be too close to the sea. The location of this main dam is one of the big problems to be solved.

In the Carribean sector below the big dam there are many important problems that must be studied. It is perfectly feasible to build a canal following in general the north bank of the San Juan River to Greytown. Such a canal would have poor foundations for the extensive embankments that would be necessary. A so-called high-level line is coming in for special study. A canal on this line would leave the San Juan River near Conchuda, cross the basin of the San Francisco River at lake level to the East Divide, and thence follow the valley of the Deseado River to Greytown. A harbor at Greytown, which is common to both lines, is feasible and practicable from an engineering point of view, but it involves the solution of many delicate problems and will be expensive because of the enormous sand movements taking place along the coast.

There is an old saying to the effect that if you have



Main Street, Greytown

not seen Paris you have not been to France. It is equally true that if you have not penetrated the jungle of the San Juan River you do not know what real jungle looks like. Can you imagine a rainfall of about 300 inches a year? Perhaps not unless you have been to Greytown at the mouth of the San Juan River, for that is the wettest place in the Americas. In such a country tents are useless. Thatched native shacks are the only solution to a temporary housing problem. Have you ever tried to make a map in a continuous down pour, in a jungle so thick that you cannot see ten feet in any direction, where the foliage is so dense overhead that little light penetrates and a permanent gloom pervades? Have you ever tried to run a traverse across miles of swamp where at no place is the footing sufficiently secure to keep you from sinking to your waist, frequently your neck, and usually over your head? Imagine unnumbered mosquitoes, insects by the million, so varied as to size, shape, bite and method of locomotion that classification is impossible. Throw in some alligators, snakes, scorpions, vipers and poisonous



Surveying Under Difficulties in the San Juan River Swamp

small reptiles, not to mention the ticks, and you have a picture of the conditions under which Army personnel have been laboring in Nicaragua.

The headquarters of the survey is located at Granada, a quaint but comfortable place to live. Headquarters is housed in an old monastery that is rich in history, as it has played a part in the many revolutions of the country. It contains six patios with many wide corridors. More comfortable barracks or a more satisfactory layout for a headquarters could not be found. The base camps—Camp Hoover at Ochoa and Camp Hurley at Greytown—have been made as comfortable as conditions permit. Portable electric generators furnish lights, all walks and streets have duck-



San Francisco Church and Monastery. Headquarters of the Survey at Granada

boards, and radio sets maintain communication with the Granada headquarters. Field hospitals are well equipped and are screened. Because of the meticulous observance of sanitary regulations by the troops, and

the expert supervision of all medical and sanitary matter by the chief surgeon and his assistants, the health of the troops has been excellent.

There is a young second lieutenant, out of West Point about a year, in charge of the supply line from Fort San Carlos, on Lake Nicaragua, to Greytown. His only connection with the rear is a sixty-year old lake steamer that runs from Granada once a week.



Main Patio of Headquarters Building, Granada

He must supply the camps along 125 miles of river. The American soldier is not satisfied with a native ration of rice and beans; his health, his happiness, and his efficiency demand the good old army ration in full. And such a river! The upper section near the lake causes no trouble. Then comes the rapids section where the river drops 35 feet over five series of rapids, with one place a fall of six feet in one-third of a mile. The lower 20 miles of the river is so choked with sand bars that during the dry season only native dugouts can be used, and they must be dragged by hand most of the way. This young officer has two small lanchettes built of native green wood, half a dozen wooden pontoon boats for barges, and numerous small craft such as native *cayucas*. He has his troubles.



Camp Hoover at Ochoa. Most of Tents Were Later Replaced by Thatched Huts

but he also can see the results of foresight, good judgment, initiative, and leadership. I recommend the job for any youngster who wishes to develop these qualities.

Take the case of the commanding officer of Company F, 11th Engineers, not because his job on the Canal Survey has been more difficult than the others but because he was the first to arrive. The transport anchored in six fathoms of water some miles off shore at Corinto. The company broke out the supplies from the ship's hold and loaded them into Navy motor sailers. Fortunately the "Denver" was in port and her captain made available four motor-sailers for lightering cargo. Upon arrival at the dock, supplies had to be lifted by hand and transferred to waiting freight cars. More than 200 tons were handled between 7:00 A. M. and 11:00 P. M.; by 2:00 A. M. the cars were loaded and the company then got some rest in an old public building at Corinto. The railroad trip to Granada consumed all the next day. At Granada the troops were billeted in an old monastery placed at our disposal by the Nicaraguan government. From Granada the company had to proceed at the rate of one platoon a week via lake steamer to Fort San Carlos, thence down the San Juan River to its work area, which includes the river line from El Castillo to Greytown and the high-level line to the East Divide. The company has had as many as



Temporary Quarters for Married Officers at Ochoa

ten sub-camps scattered through the jungle at one time, to which supplies are transported in frail native dugouts over log-choked tributary streams, or over trails by native packers. Aside from his engineering experience, this company commander has had all the experience and training that go with maintaining an almost independent command scattered over a large area.

The San Juan River Valley is not in the bandit zone, but Sandino, the old enemy of the Marines, has published threats that he will not let the canal work proceed, so some thought has to be given to the safety of the camps.

Company A, 29th Engineers, in the Greytown area, has its base camp in the old Canal Company's machine shops on Greytown Lagoon, and its activities extend along the Deseado River to its headquarters on the East Divide. Much of the diamond drilling to determine foundation conditions is in this area.

Company A, 1st Engineers has the Rivas-Brito area, extending from the Pacific to Lake Nicaragua, the

survey of the lake itself, and the San Juan River area down as far as Castillo. This company has a large area but it has better country in which to operate. Around Rivas there are some so-called roads that can be used by oxcarts in the dry season. In the remainder of the canal zone any wheel transportation is useless. Pack ponies and pack bulls were tried without success.

With respect to the Panama Canal, expensive delays to shipping will occur unless the proposed third set of locks is ready by the time annual traffic needs more facilities. A third set of locks will cost something like \$100,000,000, and their construction should begin about ten years before they are actually needed. The traffic at Gatun in 1929 averaged 17 lockages per day; in 1920 the average was seven. It will take at least ten years to increase the facilities of the Panama Canal or to build a Nicaraguan canal. Which is the more profitable investment? The Nicaragua Canal should have



Sub-camp on Lake Silico

locks larger than those of the Panama, which are 1,000 by 110 feet. The trend of commercial ship building is decidedly in favor of larger ships and it may be expected that the size of new locks will have to be greater than that of the locks of the Panama Canal.

Shorter and cheaper traffic lanes create new trade. The cost of transportation is a vital factor in the development and extension of domestic and foreign trade. The Nicaragua Canal will develop commerce and trade in Central America that will never be developed with the Panama Canal alone. The history of the United States shows conclusively that there is hardly any limit to the number of transportation facilities that are desirable, and that each one generally develops commerce and trade far beyond the estimates made for it.

The Nicaragua Canal will shorten the distance from the Atlantic seaboard to the west coast and the orient by about one day, and from the gulf coast by about three days. It will provide a shorter route for 80 per cent of the traffic that used the Panama Canal in 1926.

A second canal will have national defense value—both routes must be destroyed by an enemy before

interoceanic communication is severed. The Nicaragua Canal Zone is not as subject to severe earthquake shocks as the Panama Zone. The argument of danger from earthquakes, like that of danger from human enemies, is an argument against Panama as well as



Sub-camp of Company F, 11th Engineers, in Rio Negro Hills

against Nicaragua, and is an argument for two canals rather than one.

The canal will develop the resources of Nicaragua and promote its prosperity. Prosperity means better roads, more railroads, and other improved means of communication in Nicaragua. A prosperous Nicaragua will mean a quiet Nicaragua. Revolutions and internal strife will cease. Foreign capital can enter Nicaragua in safety. The canal will promote trade and friendly relations with the countries of Central and South America. The United States needs their trade and friendly cooperation.

The Nicaragua Canal will be built within the life-



Supply Train of Company A, 1st Engineers, in Rivas-Brito Area

time of the present generation. Just when work should be initiated may be open to argument and discussion by statesmen, diplomats, strategists, economists, and tax payers in general. The present survey will clear up many of the doubtful factors.

Air Density In Fire Control

By Capt. B. T. Sherry, S.C.

WHEN a projectile is fired from a gun, the distance and direction the projectile will travel after leaving the gun depends, among other things, on the weather. The atmospheric elements that influence the distance and direction a projectile will travel after leaving a gun are the wind and air density. If a projectile is fired in the same direction that the wind is blowing, it will travel a greater distance than if it is fired against the wind. If a projectile is fired at right angles to the direction the wind is blowing, the projectile will be deflected to one side of its normal path by the wind. It is therefore necessary to make corrections to the aim of guns for the wind speed and wind direction. These corrections are important when long range or high angle fire is concerned.

The distance a projectile will travel after being fired from a gun depends to some extent also on the density of the air. When the air density is greater than normal, a projectile shot from a gun will not travel as far as it will in normal air density. On the other hand, when the air density is less than normal, the projectile will travel farther than it will in normal air density.

The behavior of a projectile shot from a gun is influenced not only by the wind and air density near the gun but also by the wind and air density along the path followed by the projectile from the gun to the target. As projectiles sometimes reach heights of several miles, it is necessary to consider the wind and air density at these altitudes if one wants to determine the wind and air density through which the projectile passes.

The measuring of wind speed and direction at various altitudes is done by observing the drift of pilot balloons with special theodolites and the results are fairly satisfactory. The results of attempts to determine air densities at various altitudes above the ground under field conditions are not satisfactory. Since no satisfactory method has been devised for use under field conditions to determine the air densities at high altitudes, it is necessary to resort to a method that may be expected to give the best approximation of the true air densities at various levels above the ground.

In computing firing tables the Ordnance Department has assumed that the density of the air at the gun under normal conditions is 1203.4 grams per cubic meter. This is approximately the average air density actually found at a height of 940 feet above sea level in the central part of the United States. The Ordnance Department has also assumed that the density decreases a definite amount with increase in altitude. In other words, definite values for air density have been assumed for various heights above the gun. The values used as standard by the Ordnance Department for

air density at various heights above the gun do not agree with average values determined from actual observations, but the differences are not important, except possibly for very high levels. Air density, especially in the lower levels, is constantly changing. For instances, the average air density at 940 feet above sea level during the three winter months is approximately 5% greater than the average yearly density and the average air density during the three summer months at this height is approximately 5% less than the average yearly density. On individual days in winter the air has been observed to be 8% denser than normal and on individual days in summer the air density has been observed to be 7% less than the normal yearly density.

If one wants to take advantage of all aids in fire control, he must consider air density. The amount of error due to neglect of air density is generally not large but in unusual cases of long range fire the variation of air density may cause a projectile to miss the target by one quarter of a mile if no correction is made for this variation. It is therefore necessary to make an effort to correct for such errors.

Air density is not measured directly but is computed by the use of the following formula:

$$D = \frac{b - .378e}{459 + t} \times 21218$$

Where D is air density in grams per cubic meter.

b is station barometer reading in inches.

e is vapor pressure in inches of mercury.

t is temperature on Fahrenheit scale.

In order to determine air density, it is necessary therefore to measure the air temperature, the air pressure and the vapor pressure at the place where it is desired to determine the air density. In fire control it is desired to know the air density along the path followed by the projectile from the gun to the target. As it is impracticable to get this information directly, the air temperature, air pressure and vapor pressure are determined for certain levels and the values at these levels are taken as the values of these elements at the same levels on the trajectory of the projectile. An airplane is used in making measurements of the atmospheric elements at levels above the ground. The airplane carries a meteorological observer who reads the various meteorological instruments at the desired levels above the ground. The data are brought back to the meteorological station and the air density computed for the desired levels.

The making of observations with an airplane under field conditions upon which to base computations of air density is not a satisfactory method because:

a. In an airplane it is difficult to determine true free air conditions that are not affected by the presence of the airplane and its engine.

b. Considerable time elapses between the times observations are made and the necessary computations are completed, because under present conditions the airplane must bring the data to the ground before the computations can be started, and in the meantime the weather is likely to change.

c. The airplane seldom succeeds in reaching altitudes above 15,000 feet and then only with considerable time elapsing before the data are available for the Artillery.

d. Airplanes are not always available, or, if available, fog or other adverse conditions may prevent or interfere with their operation.

Efforts have been made therefore to find a simpler and quicker method of determining air density for Artillery that will be more suitable for field use. The United States Weather Bureau has made many thousands of observations of air density at various altitudes with the aid of kites and balloons. The results of these observations are available. Based on these results, tables were prepared in the Office of the Chief Signal Officer, showing the average rate of change in

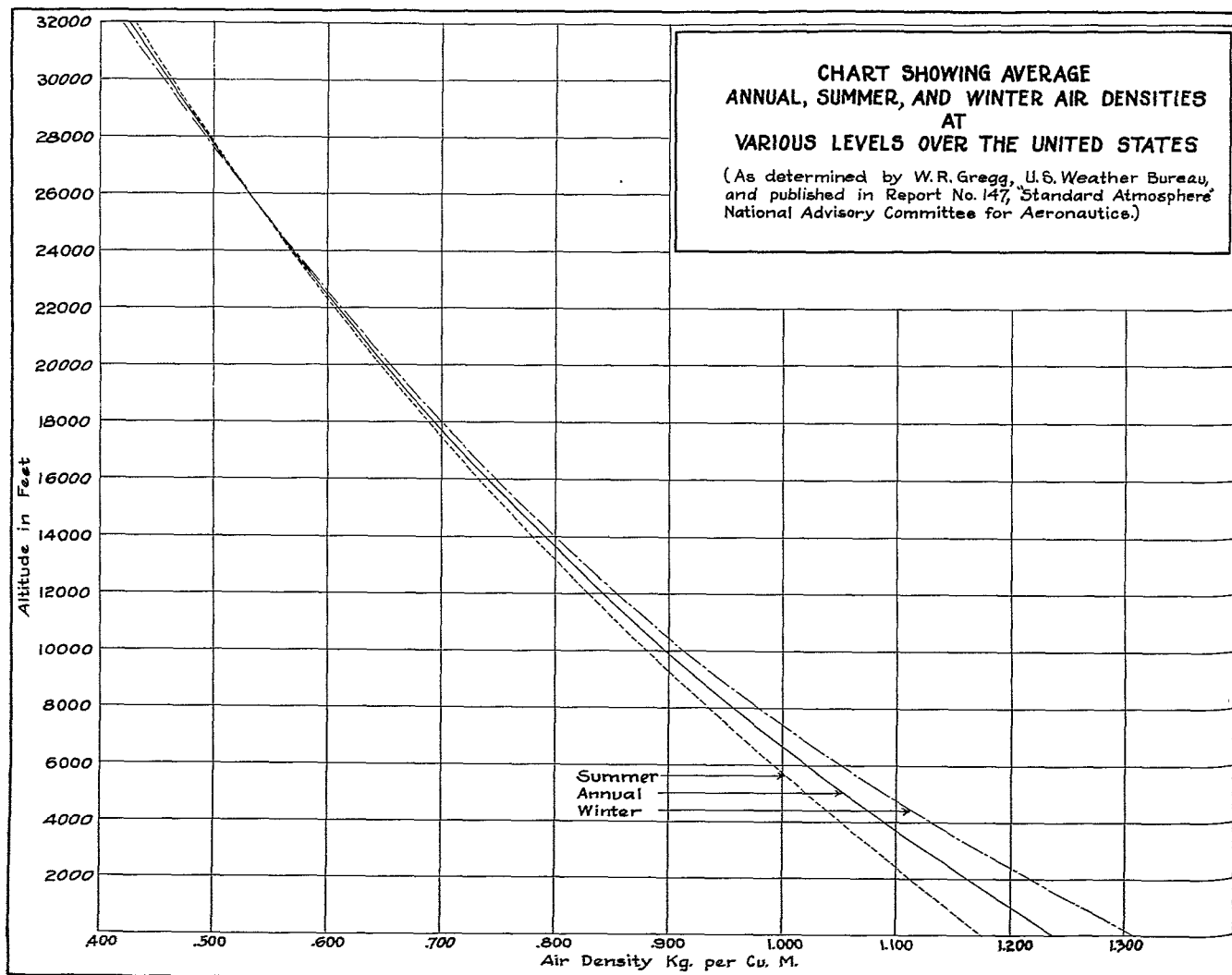
air density with increase in altitude for all air densities ordinarily observed at the surface of the earth. For instance, when the air density at a gun 940 feet above sea level is found to be 105% of the Ordnance Department normal density, these tables show that the density will be approximately 103% of the Ordnance Department normal density at an altitude of 3,370 feet and 100% of normal at 15,400 feet above the gun. On the other hand, if the density is 95% of normal at the gun, it will be approximately 97% of normal at an altitude of 7,000 feet and 98% of normal at 21,000 feet above the gun.

A study of the results of a large number of observations of air density made with kites and sounding balloons indicates that the following statements are generally true:

a. When the air density is normal at the earth's surface, it is approximately normal at all altitudes up to and probably above 50,000 feet.

b. At an altitude of 26,250 feet above sea level the air density remains approximately constant.

c. When the air density is above normal at the surface, it is usually above normal at all altitudes up to 26,250 feet and below normal above 26,250 feet.



d. The greatest variations in air density usually occur at the surface of the earth and when the air density is above or below normal at the surface, the departure from normal becomes less and less with increase in altitude, becoming normal at about 26,250 feet above sea level.

If the statements above are accepted as generally true, it is evident that one may determine the approximate air density at any particular height if he knows the air density at the surface of the earth. Since no matter what the air density at the surface may be, the air density at an altitude of 26,250 feet above sea level remains approximately constant, it follows that the rate of change of air density with increase in altitude depends on what the density happens to be at the surface of the earth.

After giving the matter very careful consideration, it is believed that more satisfactory results will be obtained if, in determining air density for the use of the Artillery under field conditions, the actual observations are limited to a determination of air density at the surface of the earth. Instead of trying to make observations at high altitudes, it is believed that more satisfactory results will be attained if the density at any particular height is assumed to be the average of all densities that have been actually observed at that height when the air density at the surface was the same as in the case under consideration. No pretense is made that this method will produce highly accurate results. It is believed, however, that results obtained in the manner outlined will compare favorably with respect to accuracy with results obtained by sending an observer aloft in an airplane under field conditions to make observations of air density. Furthermore the method outlined may be used when airplanes are not available or cannot operate.

The Artillery is not equipped to use true air density data. That is, it is of no advantage to the artilleryman to know that the air density at his gun is 98% of normal. What he wants to know is the "ballistic density" for the maximum ordinate that the projectile he proposes to fire will reach in traveling from his particular gun to the target. The "ballistic density" may be defined as a single computed air density that will have the same effect on the behavior of a projectile as all the various air densities through which the projectile passes in traveling from the gun to the target. Separate ballistic air densities are computed for maximum ordinates of 600 feet, 1,500 feet, 3,000 feet and so on up, at varying intervals, to 30,000 feet.

Ballistic air densities are computed for each maximum ordinate by multiplying the air density at designated levels by weighing factors; the sum of the products thus obtained is the ballistic density for the particular maximum ordinate. The method described below is believed to be the most satisfactory for use in computing ballistic density for the Artillery.

- a. The air density at the ground is computed from data obtained by observing the actual air temperature, air pressure and vapor pressure.
- b. The average value of the air density that has

been observed at each of the designated levels when the particular density prevailed at the surface is determined from tables.

c. These average densities for designated levels are then multiplied by the proper weighting factors and the sum of the products is the ballistic density for the particular maximum ordinate under consideration.

d. A separate computation is required to determine the ballistic density for each maximum ordinate.

An example of the processes involved is given below. Suppose it is desired to compute the ballistic density for a maximum ordinate of 4,500 feet for use with a gun at sea level. The barometer reading is 29.60 inches, the temperature is 84° and the vapor pressure is .926 inch:

a. Using the formula given above, the air density is found to be 1143.0 grams per cubic meter. This density is 95% of the standard density for Artillery.

b. From the tables of averages it is found that when the air density at sea level is 95% of normal, the average air density found at 300 feet above sea level is 95.2%; at 1,050 feet, 95.6%; at 2,250 feet, 96.3% and at 3,750 feet, 97.1%.

c. The ballistic density is then determined by multiplying these densities by appropriate weighting factors as illustrated below:

<i>Altitude above sea level, in feet</i>	<i>Air density in %</i>	<i>Weighting factors</i>	<i>Density X weighting factors</i>
3,750	97.1	.323	31.4
2,250	96.3	.314	30.2
1,050	95.6	.212	20.3
300	95.2	.151	14.4
Ballistic density for maximum ordinate of 4,500 feet			96.3

The density at an altitude of 300 feet is used to represent the average air density of the first zone between sea level and 600 feet above sea level; the air density at 1,050 feet is used to represent the average air density of the second zone between 600 feet and 1,500 feet above sea level; the densities at 2,250 feet and 3,750 feet above sea level represent the densities in the third and fourth zones, respectively.

The method outlined above is based on the assumption that with a given air density at the surface of the earth, the air density at any level above the surface will be the average of the values that were found at that level by actual observations when the given density was observed at the surface. Since the density at any altitude above the surface is assumed to depend on the density at the surface, it is possible to compute in advance the ballistic densities for all standard maximum ordinates for all densities likely to be observed at the surface. These ballistic densities, computed in the Office of the Chief Signal Officer and

arranged in tables, make it unnecessary for the computations to be done in the field. All that is necessary to do in the field is to determine the density at the ground and, using this surface density as the argument, find the ballistic density from the tables for any particular maximum ordinate desired.

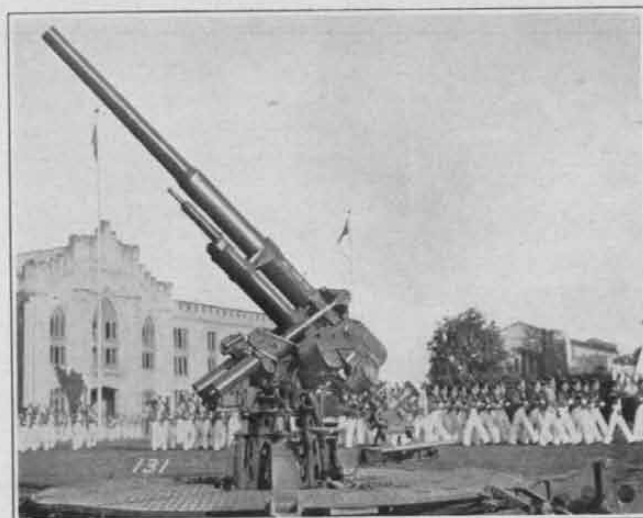
Since guns are not always located at the same level above the sea, tables have been prepared for use with guns located at sea level, at 1,000 feet above sea level and also at 2,000 feet above sea level. For guns located at any altitude higher than 2,000 feet above sea level, it will be necessary, for the present, to use the values in the table for an altitude of 2,000 feet. For guns located at levels between sea level and 1,000 feet above sea level or between 1,000 and 2,000 feet above sea level, the ballistic density values should be interpolated from the two appropriate tables. The meteorological station will send out by radio the ballistic air density in per cent of the Ordnance Department normal for all standard maximum ordinates.

The meteorological station should be located at approximately the average altitude of the Artillery units served. Differences of a few hundred feet between the altitude of the Artillery and the meteorological station will not introduce large errors, but if there is a difference of more than 500 feet in altitude between

the meteorological station and the Artillery, special provision should be made at the meteorological station to correct the density for this difference in elevation.

In the computation of ballistic density and ballistic wind for use with antiaircraft guns, it is necessary to use different weighting factors from those used in the computation of ballistic densities and ballistic wind for Terrestrial Artillery. The meteorological station therefore broadcasts two sets of meteorological data for Artillery, one set of data for the use of Terrestrial Artillery and another set of data for the use of the Antiaircraft Artillery.

As a test of the accuracy of the method described, densities computed by this method were compared with ballistic densities computed with data obtained by sending recording instruments aloft by means of sounding balloons. More than two hundred ballistic densities were computed by both methods. In sixty-seven per cent of the cases, ballistic densities computed by the two methods differed by not more than one per cent; in twenty-four per cent of the cases, the ballistic densities differed by between one and two per cent; and in nine per cent of the cases, the ballistic densities differed by between two and four per cent. The larger discrepancies occurred during a period when the country was overspread by unusually cold dense air.



The Virginia Military Cadets Parade for the 61st at Lexington.

Tank Divisions

Major C. C. Benson, Cavalry

A few outspoken enthusiasts maintain that most of the fighting in future wars will be done by machines. Those who rely more upon practical experience than upon imagination can hardly accept this view without important reservations. Fighting machines are particularly sensitive to the ground; as the ground gets rougher, their efficiency falls off rapidly. In extremely difficult country, they are practically useless. Infantry and cavalry take the ground as they find it, and no machine can compete with them on rugged or wooded terrain. Even in open country, there are towns, patches of woods, hills, and watercourses that form reefs on which land battleships may come to grief under the antitank guns of the enemy. The ability of mechanized units to operate independently for brief periods should not obscure the fact that they will be organized primarily for cooperation with other arms. Both the old and the new combat elements have their parts to play. The real problem is not to carve out an exclusive role for mechanized units, but to coordinate their uses with those of existing means.

Purpose of Mechanization

Though we must look to the future for the development of mechanization in our Service, there are a number of important matters that can profitably receive immediate attention. The first of these is to determine definitely the purpose of mechanization. During the World War, attacks melted away under the withering fire of the defender's deeply echeloned cannon and machine guns. Since the war, all armies have greatly increased the quota of automatic weapons assigned to infantry and cavalry units; and have thus given defensive action greater preponderance than ever. In close proximity to an organized system of hostile machine guns, even infantry is pinned to the ground and deprived of that tactical mobility which is essential to offensive action. With a tactical doctrine based on aggressive offensive action, we must provide adequate means for offensive action. The armored cross-country fighting machine affords one means of disrupting the hostile machine gun organization and assisting the whole force to overcome the power of the defensive. The purpose of mechanization is to provide ground troops with an effective offensive element.

Combat Missions

Second, what are the principal combat missions that mechanized units will have to perform? We may safely assume that in future wars all ground forces will be more extensively motorized and mechanized than heretofore. In the past, mechanized units equipped with tanks have been used principally in stabilized warfare, to lead the assault upon well organized positions. However, if our conceptions of tactical employment are to keep pace with mechanical

progress, we must not limit our vision to past performances.

The present tendency, in foreign armies and in our own, is to increase the use of tanks in the assault echelon. In an address delivered on September 1, 1927, General Summerall said, "It will not again be justifiable to exhaust infantry by long marches when they can be transported by motor vehicles, nor can be conceived a repetition of the slaughter of our assault battalions when the enemy's organization in attack or defense can be shattered by bombing and attack planes and by tanks." It is not to be expected that Infantrymen will discard powerful weapons of proven value. They have made and are making strenuous efforts to secure better fighting machines and more of them. The Infantry will probably enter the next war with the best tanks available, organized and trained to lead the assault.

Mechanical unreliability and a comparatively limited radius of action restricted tanks initially to the assault role; but times have changed. Automotive progress has opened up an entirely new strategical and tactical field—that of self-sustained operations by armored forces. Recent mechanical developments have established a dependable foundation for units equipped with fighting machines that can be used for rapid extended maneuver. Such units will add greatly to the power of our arms. On favorable ground, they will be able to travel much farther and faster than units that depend upon the physical endurance of man and beast. They can be used to supplement the efforts of either infantry or cavalry, depending on the nature of the ground and the opportunities that might arise for decisive action. In preliminary operations, they will be the first elements to gain actual contact with the enemy; in an action of the combined arms, they can serve as a highly mobile reserve with which to strike the decisive blow. Their chief characteristic will be mobility; their principal weapon, surprise.

There are, then, two principal combat missions that mechanized units will have to perform:

1. To lead the assault upon well organized positions;
2. To maneuver rapidly and deliver sudden powerful blows against the enemy's front, flanks, and rear.

Organization

We cannot reasonably expect a single unit to execute efficiently missions so markedly different; consequently, it will be necessary to consider carefully the matter of organization. The machines used for different purposes may be identical except for thickness of armor and details of armament; but the organizations will be different. Supply, control, and tactics in a fast-moving force will certainly differ from similar items in relatively slow, heavily armored, assault units.

Thus, whereas machines may be standardized, mechanized units must be organized to perform their respective primary missions.

What organization is necessary to carry out these missions? The organization plan should cover all phases of the problem, including establishments for the design, procurement, inspection, testing, storage, issue, and repair of equipment, as well as for the training of personnel. Design and procurement particularly are matters that will require the expert attention of an agency which can keep the Assistant Secretary of War accurately informed as to the needs of the combat troops. Our present general mobilization plan makes some provision for these essential establishments, and includes combat units equipped with tanks to lead the assault. This plan apparently underestimates our tank needs, especially in the number of officers required to replace casualties. From September 16 to November 10, 1918, officer casualties among the U. S. Tank Corps personnel engaged in the Meuse-Argonne were more than 42 per cent (killed 5.34%; wounded 37.5%). However, if revised to meet increasing demands, the present plan can be made to cover the tank assault units. We cannot in this brief discussion cover all phases of the problem; consequently, we shall limit ourselves to units for which the general mobilization plan makes no provision whatever—that is, units organized and equipped for rapid extended maneuver.

The organization of these units is a matter for immediate consideration, not only because of their



Tanks and Infantry in the Assault.

potential value in combat, but also because their creation will affect materially the revision of present plans for mobilization and for procurement. The writer suggests that these units be organized as Tank Divisions.

A tank division should be characterized by *mobility*, *simplicity*, and *flexibility*.

High mobility, both strategically and tactically, must be assured. To insure strategical mobility, all but essential elements must be excluded. Thus we eliminate all anti-aircraft cannon, their fire control apparatus and

searchlights; and rely entirely upon machine guns for anti-aircraft fire. Similarly, pontoon trains, medium tanks, heavy tanks, and cumbersome repair equipment are rejected. If needed for a particular operation, these elements can be attached to a tank division; but to assign them organically would kill its mobility. Tactical or battle mobility demands a well-balanced, self-reliant organization which has within itself the means to overcome obstacles that will be encountered



Ford Tanks. One Hundred a Day Had the War Continued into 1919.

on the battlefield. Engineers and pioneers, chemical weapons, and some 105-mm. howitzers will be needed for this purpose. Careful adjustment of conflicting requirements will be necessary to secure strategical and tactical mobility.

No matter how carefully these adjustments are made, actual mobility will depend upon supply and the mechanical condition of machines. Supplies must go forward regardless of congested roads, or the complete absence of roads; and must therefore be carried in cross-country vehicles. To decrease demands for supplies from the rear and to keep the maximum number of machines ready to operate, mechanized units should have their own salvage crews well forward. The actual operation and maintenance of complicated machines will require skillful and reliable men. It is therefore proposed to provide each platoon with one warrant officer, who will be responsible for property, for the mechanical field training of enlisted men, and for the mechanical maintenance of machines. The idea is to secure practical workers who can handle machines and men. Their share in preserving the mobility of mechanized units will be of the utmost importance.

Simplicity applies to equipment, supply, training, operation, command and control of mechanized units. Many difficulties will be avoided by strict limitation of vehicles to the fewest possible types, and by standardization of those that are adopted. Interchangeable spare parts, unit assemblies, and armor plates, while involving some avoidable expense in peace, will effect real economy under field service conditions. Instead of having some tanks armed with three-pounders and others with 75-mm. guns, it would be better for procurement, training, and ammunition supply to develop a standard six-pounder gun. To command and control these highly mobile units will be ex-

remely difficult at best; consequently, supply and administration must be relegated to rear echelons, so as to keep combat elements stripped for action. To exploit fully the potential powers of such a force, the combat echelon must operate from a base, or advanced bases. The establishment and operation of such bases will be entrusted to the rear echelon. The utmost simplicity in the organization and equipment of mechanized combat units will facilitate effective tactical employment.

Flexibility applies to subdivision, expansion, and the normal combat operations of the tank division as a whole. For the execution of minor tasks without undue expenditure of force, either alone or in co-operation with other arms, the organization should be capable of subdivision into well-balanced detachments of varying size. For important missions, it will frequently be necessary to attach units of other arms to tank divisions. Infantry in trucks, motorized artillery, aircraft, cavalry, engineers, and medium or heavy tanks, may be attached for particular operations. Tank divisions should be organized so as to provide for the efficient management of attached units, even when the temporary expansion involves a considerable increase in strength. Furthermore, company and higher commanders should have, under personal control, the means to exert a powerful influence during the progress of an action. To provide such means, without disrupting lower units, it is desirable to give these commanders real combat power in their respective headquarters sections. They must expect to engage and lead in action just as naval commanders have always done.

Tank versus tank actions will develop and culminate even more rapidly than cavalry versus cavalry actions. Tank division and brigade commanders can and should

have highly centralized control of their units before and after an engagement; but in action they will be unable to direct in detail the fast moving operations of their combat units. If they attempt to issue detailed orders, confusion and delay will result. Much must therefore be left to the initiative and judgment of subordinates. The adaptability of a tank division to rapid changes in the situation will depend largely upon subordinates who can assume their proper share of responsibility in action. Each unit should have an ample quota of officers, so that higher commanders will not hesitate to exploit the full powers of highly mobile combat elements.

As equipment forms the material basis for organization, let us assume that the following machines can be procured, and proceed to devise an organization for a Tank Division.

Type A. Similar to the eight-wheel Christie wheel-and-track chassis (present model); armed with one six-pounder cannon and a pair of machine guns; radio equipped; normal crew in combat, three men; capable of accommodating four men on route marches; sustained road speed, 35 miles an hour; sustained cross-country speed, 15 miles an hour. This machine is to serve for combat, scouting, and command.

Type B. Similar to the ten-wheel Christie wheel-and-track chassis (like present model in all respects except crew compartment, which will be about three feet longer); crew, four men; speed, as above. This machine will provide transportation for chemical weapons, 105-mm. howitzers, salvage kit, kitchen equipment, supplies, and equipment.

To insure uniform mobility and real simplicity, no other types of vehicles will be included in the brigade and lower echelons of our tank division. The proposed organization, in brief outline, is:

	Platoon				Battalion						
	Platoon	Company			1st Company						Battalion
		Command Platoon	2 Line Platoons	Total Co.	Command Platoon	Line Platoon	Pioneer Platoon	Supply Platoon	Total Hq. Co.	2d & 3d Cos.	
COMBAT ECHELON											
6-pdr. gun tanks	2	3	4	7	3	2	....	....	5	14	19
REAR ECHELON											
Cargo tanks . . . . .	....	....	....	....	....	....	3	3	6	....	6
Kitchens . . . . .	....	....	....	....	....	....	....	1	1	....	1
Total vehicles	2	3	4	7	3	2	3	4	12	14	26
PERSONNEL											
Commissioned	1	3	2	5	3	1	1	1	6	10	16
Other Grades	7	9	14	23	9	7	11	15	42	46	88
Total Personnel	8	12	16	28	12	8	12	16	48	56	104
Column Number	1	2	3	4	5	6	7	8	9	10	11

The following notes are numbered in accordance with the columns to which they pertain.

1. High speed, difficult control, hence only two tanks to a platoon.

2. Command platoon exceeds line platoon in combat power.

4. No training, reserve, replacement, or supply vehicles; higher echelons must provide; company always stripped for action.

6. Line platoon especially trained and equipped for reconnaissance work.

7. Small pioneer unit, with tools and demolition equipment, to insure combat mobility.

8. Cargo tanks for oil, grease, gas, ammunition, and food; absolute minimum; one kitchen vehicle for whole battalion.

9. Supply and service elements (seven vehicles) form rear echelon and do not ordinarily participate directly in action. Armed with machine guns for antiaircraft and ground protection.

	Regiment												
	1st Battalion												
	Headquarters Company					Chemical Company					Line Co.	Total Battalion	2d and 3d Battalions
	Command Platoon	Pioneer Platoon	Supply Platoon	Salvage Platoon	Total Hq. Co.	Command Platoon	Mortar Platoon	Mortar Platoon	Supply Platoon	Total Co.			
COMBAT ECHELON													
6-pdr. gun tanks	4	....	....	....	4	3	....	....	....	3	7	14	38
4.2 chemical mortar tanks .....	....	....	....	....	....	....	3	3	....	6	....	6	6
REAR ECHELON													
Cargo tanks .....	....	3	3	3	9	....	....	....	3	3	....	12	12
Kitchens .....	....	....	1	....	1	....	....	....	....	....	....	1	2
Total vehicles	4	3	4	3	14	3	3	3	3	12	7	33	52
PERSONNEL													
Commissioned	4	1	2	1	8	3	1	1	1	6	5	19	32
Other Grades	12	11	14	11	48	9	11	11	11	42	23	113	176
Total Personnel	16	12	16	12	56	12	12	12	12	48	28	132	208
Column Number	12	13	14	15	16	17	18	19	20	21	22	23	24

	Brigade												
	1st Regiment												
	1st Battalion									2d and 3d Battalions	Regiment	2d and 3d Regiments	Brigade
	Headquarters Company				Supply Company			Line Company	Total Battalion				
	Command Platoon	Pioneer Platoon	Admn. Plat.	Total Co.	Command Platoon	3 Supply Platoons	Total Co.						
COMBAT ECHELON													
6-pdr. gun tanks	4	....	....	4	....	....	....	7	11	28	39	104	143
4.2 chemical mortar tanks .....	....	....	....	....	....	....	....	....	....	12	12	12	24
REAR ECHELON													
Cargo tanks .....	....	3	4	7	4	12	16	....	23	24	47	48	95
Kitchens .....	....	....	....	....	2	....	2	....	2	2	4	6	10
Total vehicles	4	3	4	11	6	12	18	7	36	66	102	170	272
PERSONNEL													
Commissioned	5	1	2	8	1	3	4	5	17	36	53	102	155
Other Grades	11	11	14	36	23	45	68	23	127	228	355	578	933
Total Personnel	16	12	16	44	24	48	72	28	144	264	408	680	1088
Column Number	26	27	28	29	30	31	32	33	34	35	36	37	38

15. Small salvage unit to connect battle area with repair establishments in rear.

17. For control and security of mortar tanks.

18. Chemical mortars to blind enemy's observation posts and antitank guns.

20. Two vehicles for reserve ammunition; one with chemical agents.

22. Line company especially trained and equipped for reconnaissance work.

23. Regimental commander has 20 combat machines to back up the action of 38 in his two line battalions.

25. Supply and service elements (27 vehicles) form the rear

echelon and do not ordinarily participate directly in combat. Armed with machine guns for antiaircraft and ground protection.

28. For paper work of the brigade.

31. One supply platoon (four cargo tanks) for each regiment in the brigade. Absolute minimum for gas, oil, grease, ammunition, and food.

33. Line company especially trained and equipped for reconnaissance work.

35. 2d and 3d Battalions like 1st Battalion in line regiment.

36. Brigade commander has 51 combat machines in his 1st Regiment to back up the action of 116 in the two line regiments.

38. Supply and service elements (105 vehicles) for the rear echelon and do not ordinarily participate directly in combat. Armed with machine guns for antiaircraft and ground protection.

The tank division will consist of two line brigades and divisional troops as follows:

	Officers	Other Grades	Total Personnel
Hq. Bn.	48	207	255
Reserve Bn.	18	114	132
Training Bn.	18	114	132
Serv. Bn.	18	308	326
Eng. Bn.	17	192	209
Med. Bn.	15	135	150
Art. Bn.	38	195	233
Air Unit	18	158	176
Total divisional troops	190	1413	1603
Two Line Brigades	310	1866	2176
Total Division Personnel	500	3279	3779

Personnel of reserve and training battalions available for use as infantry.

Equipment required: about 425 combat vehicles, 350 cross-country service and supply vehicles, and such wheeled transportation as can be used to advantage in the rear echelon of the division.

It may appear premature to proceed with organization before we have had some experience in handling modern equipment. There are, however, excellent reasons for so doing. Our general mobilization plan fails in its purpose if it does not include all the units that we may expect to mobilize. To produce and maintain equipment for mechanized units will impose a heavy burden on certain of our industries. They should be fully prepared to assume that burden in war-time; but procurement plans cannot take definite shape until definite tables of organization are provided. Furthermore, the creation of mechanized units is highly desirable for training purposes. Once authorized, these units could be used in command post exercises and in problems at the service schools. Hundreds of officers throughout the Service, instead of a handful, could then apply themselves to mechanization studies. We do not hesitate to change infantry or cavalry tables of organization; nor should we hesitate to publish tables for mechanized units, even though they will be subject to change. Whether perfect or not, tables of organization should be authorized. So long as our plans are merely on paper, changes cost us nothing. The first step is to get an adequate organization established as a basis for future plans and studies.

Many years may elapse before mechanization is generally accepted in our Service. The equipment is so expensive that comparatively little of it can be had in times of peace. After the first tank division is organized and equipped, its powers and limitations will have to be determined by such experience as maneuvers provide. The Service Schools will have to modify their teachings to accommodate the newcomer, and many a class will graduate before our future commanders are thoroughly prepared to use mechanized forces, or even to cooperate with them. In the normal course of peace-time events, it will take a long time to adapt military thought to the use of fighting machines.

There are, however, certain factors that may accelerate our mechanization progress:

1. Fighting machines appeal to the American desire for energetic action and swift decision. In other words, the weapon suits our national characteristics.

2. Machines are now used in civil pursuits in this country far more extensively than in the Army.

Americans are thoroughly accustomed to the use of mechanical devices, and we have more good mechanics than any other nation in the world. Herein lies strength if the Army is prepared to use it.

3. Our industrial, material, scientific, and financial resources are ample to produce and maintain the necessary equipment. Increased mechanization in the Army provides an effective means of utilizing in national defense our acknowledged superiority in these matters.

4. Mechanization is in full accord with our plan of national defense—a plan based on the maintenance of a small but highly efficient force.

5. Armored fighting machines can be made practically immune to attacks by gas and aircraft, and can therefore be relied upon to protect ground troops from the unrestricted use of these powerful new weapons.

6. The War Department favors a reasonable measure of mechanization in our Service, and is giving serious thought to the development of a definite well-considered mechanization project.



Industry's Share, General Assembly Shop, Van Dorn Iron Works, in 1918.

7. Influential leaders in Congress appreciate the value of fighting machines, and recognize the need for an increased number of well-equipped mechanized units. It is probable that when the time comes, Congress will be prepared to grant the necessary funds.

8. Under present conditions, the necessary automotive equipment can be purchased at rock bottom prices.

In conclusion let us recall a paragraph from an address delivered by General Summerall on September 1, 1927:

The temptation is ever present to view military problems in the light of past experience. It must be borne in mind that no two situations or campaigns in war are alike. Especially must it be recognized that our last experience presented a special case that cannot be repeated. Not again can we expect allies to contain the enemy for more than a year and furnish us with all essential munitions while we are organizing our armies.

The Philippines

Major Vicente Lim, 45th Infantry (Philippine Scouts)

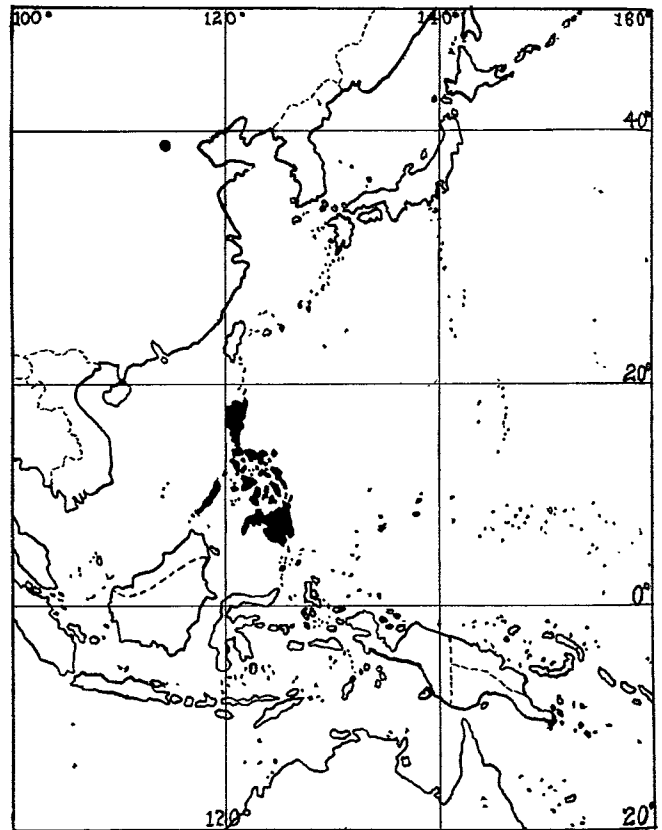
NOW-A-DAYS when commercial expansion is of paramount interest to the first power nations, countries of sparse population and still untouched natural resources have assumed special interest. These "industrial vacuums," as Dr. Bond so aptly termed them, are too few for the countries that need them; hence the increased demand for them.

Tucked in between the Pacific and the China Sea is such an "industrial vacuum" commonly called the Philippine Islands. Peopled by Malaysians with a mixture of Chinese or Spanish blood, the archipelago has been constantly under the influence of a stronger power.

The history of the Philippines is full of struggles to be free from bondage, always unsuccessful but never completely repressed. For more than three hundred years the Spaniards ruled the archipelago, implanting the Catholic religion in all the islands except Mindanao. Church and State were very closely united, and by the 19th Century the Church had become so powerful that the Archbishop of Manila was the real ruler in the islands, and the Governor General but a figure-head. On account of this increased temporal power and the vast estates acquired by religious corporations, the missionaries who at first were the protectors and educators of the Filipino people were changed into opponents of their progress and enlightenment, because of extreme conservatism and the fear of loosening the ties that bound the Filipinos to the Church and Spain. As a result there was a widespread revolution in 1896. It was then that Emilio Aguinaldo became the leader of the Filipinos. Unable to cope successfully with the situation by means of arms, Primo De Rivera, recently Dictator of Spain, entered with Aguinaldo and the other Filipino leaders into a compromise which left matters in a state of suspended animation until the United States declared war against Spain in 1898.

One bright May morning the battle of Manila Bay gave victory to Commodore Dewey, who immediately blockaded the city of Manila. Far from his base, with no army to support him, Dewey gave 30,000 rifles to Aguinaldo, to whom he had furnished transportation from Singapore through the mediation of the American consul in that city. Aguinaldo persuaded the Filipinos to fight with the Americans, as he said the great American Commodore had promised him the independence of the Philippines. This was later denied by Dewey in the congressional investigation. During the blockade, and while the American soldiers were on the way, the Filipinos were conquering the small Spanish posts all over the islands. When the first contingent of 10,000 American soldiers arrived, only the city of Manila remained under the Spanish flag, and it was besieged by the Filipinos who were aided by Admiral Dewey.

The arrival of the American Army under the command of General Merritt, with definite instructions from the President, changed this relationship of mutual helpfulness to watchful suspicions. After the surrender of Manila, in order to minimize the possibility of friction, the Filipino forces were told to keep out of the city limits, and thus, Americans within and Filipinos without, the two forces faced each other for five months of increasing friction. Finally hostilities broke out in what is known as the Philippine Insurrection, which lasted until 1901. With that unsuccessful



struggle still fresh in their minds, the Filipinos thrill at the thought of immediate and absolute independence.

An observer with eyes only for external features would be right in saying that surely the Filipinos should be thankful to be under the American flag. During the 28 years of American tutelage, the islands have undergone an almost incredible transformation. In government, Filipino participation has been increased so that at present only the governor general, the vice governor, several judges in the supreme court and courts of first instance, and a few bureau chiefs, are Americans. The Philippine legislature and all the provincial and municipal authorities are composed of Filipinos. The influence of the efforts of the United

States to establish self government in the Philippines has extended far beyond the limits of the archipelago. It has reached every part of Asia, where the people dream of free institutions and representative government; it has brought hope and inspiration to millions of subjugated natives, who see in these new ideas a promise for the future; it has shaken seriously the colonial offices of European countries. Indeed no news of the Philippines and its development was allowed to appear in any periodical in the colonies; yet news of the beneficent innovations filtered through India, Malaysia, and even in Asia Minor. Representative Hindus say that the Indian movement for home rule has been largely due to American policy in the Philippines; the pressure of native opinion in Java, Ceylon, and Indo-China, which has led to native participation in government in those colonies, sprang largely from the same source. Mr. Charles Crane, in his report on his mission for the United States to Asia Minor in 1918, states that he found everywhere an eagerness that the United States should accept a mandate for those people in order that the Americans might do for them what had been done for the Filipinos. The Chinese, too, say that their belief in the honor and unselfishness of America is due largely to the Philippine policy.

In education, progress has been almost incredible. Almost before the sound of musketry had ceased, schools were established in which the erst-while antagonists were the teachers, and the children of the insurgents were eager pupils. In a few years the system of education, patterned after the American system, was in full force. It has been so successful that now English is spoken throughout the islands and it is estimated that more than 2,000,000 Filipinos, or 20 per cent, speak English now whereas after the three centuries of Spanish rule only 7 per cent spoke Spanish. The public school system extends from the primary school in every small *barrio* or district to the University of the Philippines. The principle that underlies this system is that popular education is the life of a nation, a principle for which Rizal, the greatest Filipino patriot, worked and died. Fully 27 per cent of the Philippine revenue is devoted to public education, yet every year there are more pupils than can be accommodated in the schools. Just as the greatest legacy of Spain to the Filipino is Christianity, so America's greatest contribution to his civilization is the diffusion of the English language and American ideals in the Islands.

The great increase of school attendance is due to the fact that more children are finding an opportunity to go to school than ever before, on account of the growth of commerce and industry brought about by improved conditions of transportation, finance, public order, and the opening of markets. Statistics show that from 1909, when the Payne Bill established free trade between the United States and the Philippines, the gross trade of the Philippines nearly doubled for the first three years, and went on increasing until in 1920 it reached the remarkable total of \$300,000,000.

If the savings of the people can be taken as an index to their prosperity, figures of the postal savings bank

established in 1907 will be most interesting. By 1913 it had 40,000 depositors and more than \$1,500,000 on deposit; in 1920 there were 107,000 depositors and the deposits totalled about \$4,000,000.

But the advantages have not been wholly on the side of the Philippine Islands. I have heard it said that the Islands have been and are still a source of expense to this country and a weakness to its national defense. This is far from being true. The great expense incident to the American occupation and Philippine Insurrection was the logical outcome of the Span-



The University of the Philippines at Manila. Evidence of the American Influence.

ish-American War; therefore it can not properly be placed as a debit against the Philippine Islands. After peace was established, all expenses of the insular government were paid from local revenues, and the only direct expense of the United States has been the cost of maintaining of a portion of the Army and the Navy in the Islands, and in building island defenses. But even if the Philippines were eliminated, the Navy could not be decreased, because of our extended coast line, the Panama Canal, and possessions in the Pacific such as Alaska, Hawaii, and Guam.

Possession of the Philippines awakened the interest of the American people in the Orient, and subsequently led them to take advantage of its tremendous opportunities. Thus American trade has rapidly expanded in the Pacific. In the Philippines alone, American trade increased from less than \$6,000,000 in 1895 to more than \$171,000,000 in 1926. While in 1900 only 5 per cent of the total trade of the United States was with the Orient, it increased to 21 per cent in 1923.

With the coming of the American flag to the Philippines, the United States was compelled to think and act in terms of an Asiatic power. As such it promulgated the Open Door policy, which not only halted the impending partition of China but also gave the United States a place of commanding influence in the destiny of the Pacific. The European powers had for centuries been intrenching themselves in the East to secure its trade. England had Singapore, Hong-Kong,

and Kowloon; France, through its hold on Indo-China, controlled Saigon and Haiphong and the provinces of Kwantung, Kwangsi, and Yunan; Germany had the Bay of Kiaochow; Russia had Dalny, Port Arthur, and the province of Liaotung Peninsula; Portugal held Macao; and Japan secured Formosa and Korea. With the Boxer uprising in 1900 these powers would have had ample excuse to partition China exclusively among themselves, but the United States, through the presence of American troops in the Philippines, was able to rush two regiments of infantry to the scene and thus take active part and voice in the settlement of affairs. This resulted in what is known as the principle of Territorial Integrity of China, which became linked thereafter with the Open Door policy. Without these master strokes of American diplomacy, made possible by the presence of American forces in the Philippines, this country would have lost in the race for trade supremacy in the Pacific; and China would no longer be a nation, but a group of possessions.

The Philippines are therefore of great interest to European powers and the preservation of their colonies because these Islands act as a buffer state that prevents the advance of Japan into the Islands of Oceania. The United States, by its possession of the Philippines, holds in her hands the balance of power in the Pacific. In view of these facts the solution of the Philippine problem is mingled with that of the Far East as a whole, and its successful outcome will mean the preservation of peace, not only in the Pacific but also of the world.

Let us now turn our attention to the economic value of the islands of the United States. The tropical position of the Philippines and the great fertility of her soil make its future development of special interest to this country. Continued prosperity in the United States makes the necessities of life more numerous and complicated, and manufacturers are becoming more and more dependent upon tropical products. A partial list of these imported products which enter into American social and industrial life includes sugar and molasses, rubber and gutta percha, vegetable oils, coconut and its products, tobacco and its products, fibers of all kinds, cabinet woods, coffee, cocoa, fruits and nuts, gums and resins, spices, quinine, indigo, kapok, wood pulp, dye woods and extracts, pearl shells, sago, rice, sponges, tan bark, and others. The United States consumes more tropical products than any other nation in the world; its annual imports of wood and raw materials from the tropics amount now to more than \$2,000,000,000. The Philippines today furnish about \$100,000,000 of this import. According to experts, the Philippines can successfully grow all these tropical products and can supply the United States in sufficient quantities to free them from dependence upon foreign countries, with their tariff regulations and restrictions.

Today the Philippines hold a natural monopoly of Manila hemp, which is essential in the manufacture of binder twine and many other rope articles. As one planter expressed it, Mindanao alone could produce enough hemp to bind the entire wheat crop of America.

It could also produce almost unlimited quantities of maguey and other fibers. The Islands are among the largest producers of copra and coconut oil, so indispensable in many food products. The forest wealth is now 100 years over-ripe, and only awaits cutting in order to supply the world's fast diminishing store of hard woods.

But of all these products rubber is the most interesting. Americans consume 75 per cent of the world supply of rubber. In 1923, when England levied an export tax on rubber grown in her tropical possessions, commodities made out of it went skyrocketing in price, and manufacturers here went frantically in search of lands in which to grow their own rubber. It was then found out by experts that there are 1,500,000 acres of potential rubber land in Mindanao capable of producing 300,000 tons of rubber, or about two-thirds of the annual rubber consumption of the United States.

These facts show the possible economic value of the Philippines to the American people as a source of supply for tropical products. Geographical proximity to China, destined to be the world's greatest market, makes the Islands the best trade base for American products in the east. Lord Northcliff, who visited Manila shortly before his death, said, "The interest of most Americans in the Philippines is sentimental, but the British and Australians know Manila as probably the finest distributing center in the East, not excepting Hong-Kong."

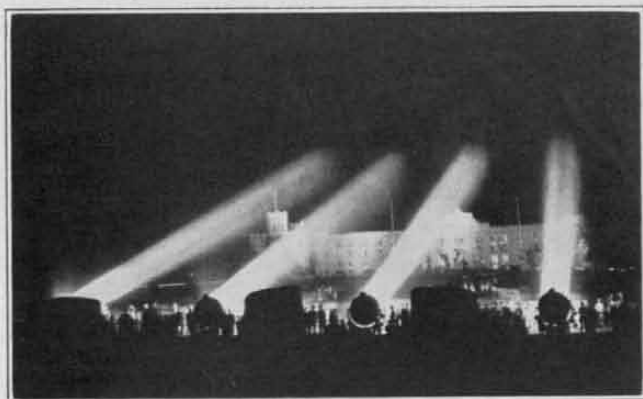
Admiral Hilary P. Jones testified before the Senate in 1924, "The Navy considers that we must possess bases in the Philippines. They are vital to our operations in the western Pacific—thus so vital that I consider their abandonment tantamount to abandonment of our ability to protect our interest in the Far East."

In view of all these facts, we can clearly see that the possession of the Philippines by the United States has resulted in big gain both for Americans and Filipinos. The work of America in the Philippines is one that any nation might be well proud of, an epic of achievement unprecedented in world history. It has meant to the Filipinos peace and security, progress and prosperity, liberty and opportunity. On account of a better standard of living, a happier frame of mind, and a more general prosperity, the present Filipino generation is stronger in constitution, more equable in temperament, and broader in conceptions. To Americans it has meant more business opportunities, a wider sphere of influence, and greater importance as a world power.

It is therefore of paramount importance that the Philippine problem be solved to the satisfaction of both parties. This problem, however, is surrounded by an artificial atmosphere. The good intentions of America are vitiated and misinterpreted by not a few Americans, well intentioned enough, who, when demonstrating that the separation of the Philippines from America would be a calamity to the former, have not been always thoughtful about the self respect and susceptibilities of so sensitive and high spirited a people as the Filipinos. Thus, instead of touching their better nature and enlisting their self interest, they

succeed only in hurting their pride and arousing their passions. Such a course has aided no one but those who find zest in animosity. Distrust replaces confidence. The Filipinos are made to feel the necessity of self defense. Americans are made to appear in the light of foes rather than friends, of condescending masters rather than willing helpers. With so baneful an atmosphere, it is not astonishing that in spite of the Filipinos' deep feeling of appreciation for the blessings America has given them, they have raised a cry against the continued relationship with their benefactors. Several formulas have been presented for the solution of this problem; the three best known being:

(1) complete and immediate separation; (2) permanent annexation; and (3) complete local autonomy, with eventual separation. Whatever formula is taken for the solution, it must fulfill three responsibilities: (1) the responsibility of the Filipinos to themselves to keep their country a fit place in which to live; (2) the responsibility of America to the Filipinos to give them a chance to live as a nation in a reasonably safe and satisfactory manner; and, (3) the responsibility of America to herself to make morally sure that her possible withdrawal from the Philippines will not open the way to conflict in the Pacific which might develop into a world conflagration.



Searchlights in Action at the Virginia Military Institute.

The College Trained Army

First Lieutenant Ralph A. Palmer, 338th Infantry

COLLEGE graduates are notorious for deserting the fields of activity for which they prepared while in college. They leave not only the Reserve but professions and businesses for which they have spent many more hours in fitting themselves. The loss after graduation is not merely a sluffing off of the poorest men. There is a loss all down the line, from the best to the poorest, which indicates that the trouble is not so much in the quality of men graduated as in the reception that they get after graduation.

To state the situation in a brief, mild way which may not suggest treason, the student officer who graduates from the Reserve Officers' Training Corps into the Officers' Reserve Corps also graduates, under present conditions, from daily contact with and application of military training to irregular contact and application; from a fixed training program to an indefinite training program; and from a status recognized by all of his daily associates to a status which is known and significant to probably about one-twentieth of his daily associates. This is a trying test upon the loyalty and interest of an officer; a test which is unnecessary and which few R. O. T. C. graduates are prepared to pass.

The R. O. T. C. graduate needs to be made to feel the responsibility of his commission. He neglects it because it does not command attention. He fails to take an interest in it because it has not been made to seem worthwhile.

Four years of R. O. T. C. training in time of peace cannot develop in a man the interest in and loyalty to the service developed by a period of active duty in time of war. The officers produced by the R. O. T. C. are therefore easy victims to some of the hundred and one other interests which are daily competing for their attention. If the O. R. C. expects to compete successfully for its share of the time and attention of its recruits, it will have to increase greatly the number and frequency of its contacts.

So far as the Reserve Officer on inactive status is concerned, the custom of the service in the matter of social calls needs to be reversed. Officers with World War experience and R. O. T. C. graduates who have survived the critical period of the first commission should assume the initiative in calling on and otherwise making contacts with officers junior to themselves, to drive home the importance of the national defense program, the O. R. C. as an element of it, and the junior officer as an element of the O. R. C. The optional group conference system is not adequately meeting the contact needs of these junior officers. This matter of contact, particularly at the lower end of the chain of command, is of sufficient importance to warrant its being named as an activity required for re-commission or promotion.

The contacts that are being made can be increased in effectiveness if the World War men will watch their attitude toward preparedness in talking to college trained officers. Men who have been through one or more wars are mostly realists. R. O. T. C. graduates, because of their youth and college training, are more inclined to be idealists. That accounts for the fact that older officers often talk preparedness for the next war to young officers who are interested in preparedness as a means of maintaining peace. Whatever may be the personal convictions of the war officers, there is only one basis on which national defense can be "sold" to R. O. T. C. graduates and the American civilian public in time of peace. It is expressed in the motto of the Reserve Officers Association, "Patriotic Preparedness Promotes Peace."

Graduates from the R. O. T. C. will also learn to respect and value their commissions more highly if the significance of these commissions in civil life (on inactive status) is increased. Ceremony, recognition of ability, and frequent opportunity to demonstrate ability are provided to help officers and men on active duty to maintain a high standard of efficiency. These elements seem to have been forgotten in providing for the inactive duty training of the reserves. Those who were in the war have their psychological demand for ceremony and recognition met in a measure by their veterans' organizations and activities on patriotic occasions. The R. O. T. C. graduate, who needs them more, has not even these. Civilians, when they think of it at all, think of patriotism and military leadership only in terms of men who have fought in past wars or who are in the Regular Army. This is a situation which the World War veterans who are still in the Reserve can do something to correct. They can, in their veterans organizations, give occasional social recognition to the college trained officers and see that it comes to the attention of their whole community. They can see that these younger officers are invited to take part in local patriotic ceremonies, and possibly can find other means of letting the public know that they have among them young men who are making personal sacrifices to help maintain a national defense program and thereby to further the hope of peace.

War is too vague and remote a possibility in the minds of most R. O. T. C. graduates to stand alone as a strong incentive to training. Being recognized, trained, and subject to emergency call for civil law enforcement would enable the reserve officer to see that his military training might become valuable to himself and his friends at any time. The handling of civil emergencies such as floods, strikes, and local crime situations call for the same quality of leadership and much of the same technique in which the reserve officer is trained. With a little special training he

could be highly useful in situations which strain ordinary civil law-enforcement facilities but which are not serious enough to warrant calling out the National Guard, or which require quicker action. There would be no legal complications to deputizing as a civil officer a reserve officer not on active duty.

Reserve officers must be ready for the call. The initial cost of the uniform and equipment is an item



Study of the Tactical Significance of Localities is Important

which keeps some R. O. T. C. graduates from ever becoming active reserve officers. At some schools the cadet uniform is so different in style from an army officer's uniform that it is a dead loss after graduation, and the graduates of those schools have to choose between paying about a hundred dollars out of their own pockets before going to camp, to get a passable uniform, or never going to camp. Many choose the latter course. If it is considered important that some schools have a distinctive cadet uniform it should also be considered important that this should not impose a financial burden on their graduates in taking up their duties as reserve officers; or should not, as is more often the case, defeat the purpose of their R. O. T. C. training.

Where officers on active duty are required to pay into camp headquarters money for mess, personal services, and the like, there should be a public accounting of these funds. By the time he has graduated from the R. O. T. C. a man knows just enough about the world to be suspicious of any expenses which are not satisfactorily accounted for. To appropriate arbitrarily a part of his pay and not account for it more definitely than to say it is for the mess, or electric lights, or orderly service, leaves a bad impression on him. It breeds dissatisfaction. To eliminate this source of dissatisfaction as far as possible, there should not only be a public accounting of such funds, but a summarized statement of the accounts should be placed in the hands of each officer whose money is involved.

Some suggestions for improving the training of reserve officers, to stimulate the interest of R. O. T. C. graduates, are:

1. Require or offer some special inducement to R. O. T. C. graduates to take active duty training at the

first opportunity after graduation. A satisfactory period of active duty training is necessary to give the graduate a little confidence in his ability as an officer, to stimulate his interest, and to establish a habit of participation in reserve affairs.

2. Break up the training requirements for re-commission or promotion into monthly tasks. The present lack of a definite inactive duty training schedule encourages the officer to keep putting off his training until it is a burdensome task and he is tempted to choose the simple alternative of dropping the whole matter.

3. Training should be planned for the efficient use of such time as the reserve officer may be able to give it. In this line, army extension course lessons should be shortened so that an officer may easily be able to complete a lesson at one sitting.

4. There is a tactical advantage in having each officer well trained in and capable of performing any and all of the duties of his grade and branch. In the Regular Army this is possible. In the Reserve it is impossible. If reserve officers were allowed to specialize more in their training along lines consistent with their individual inclinations, abilities, civil training, and pursuits, the gain in efficiency and interest might more than offset the loss in flexibility. In other words it might be better to let a man train to be a good rifle company officer, machine gun officer, or supply officer and give him a permanent assignment in his chosen line, than to attempt the discouraging task of training him a little in all the duties of his grade and branch, but not enough to enable him to work efficiently anywhere.

5. Require and provide for the reserve officer to study the military significance of the terrain features of the country in the vicinity of his home. This study should include local resources of all kinds and railroads which might be units in the industrial preparedness program. Such training would stimulate him to recall at sight the military significance of each feature in the environment of his daily life, would improve his ability in reconnaissance, and would add interest to his training.

6. Give more consideration to regimental assignment in active duty training and place more emphasis upon duties of mobilization and problems of administration. The latter should include a study of the actual management of the mess at which the officers eat, and the problems it involves. This would do much to make the officers satisfied not to complain about necessary expenses and inconveniences, and would help to eliminate any unnecessary cost and cause for dissatisfaction.

7. Concentrate training mostly on principles and technique which are not apt to become obsolete soon.

The O. R. C. is not simply a regular army short of funds. A skeleton organization of war veterans and college men, partially trained as officers, to be maintained and further trained mostly on an inactive duty basis, presents many administrative and training problems which differ from those of the Regular Army and the National Guard. Their lack of contact with troops, their civil status, training-interests, pursuits, independence, freedom from discipline, and peacetime apathy toward preparedness, demand different leadership and methods than are traditional in the usual military organization. Let us study more carefully to learn where transplanted Regular Army methods will work, and where new and original solutions are necessary.

Success in War

Major George S. Patton, Jr., Cavalry

WAR is an art and as such is not susceptible of explanation by fixed formula. Yet from the earliest time there has been an unending effort to subject its complex and emotional structure to dissection, to enunciate rules for its waging, to make tangible its intangibility. As well strive to isolate the soul by the dissection of the cadaver as to seek the essence of war by the analysis of its records. Yet despite the impossibility of physically detecting the soul, its existence is proven by its tangible reflection in acts and thoughts.

Above armed hosts there hovers an impalpable something which on occasion so dominates the material as to induce victory under circumstances quite inexplicable. To understand this something we should seek it in a manner analogous to our search for the soul; and so seeking we shall perchance find it in the reflexes produced by the acts of the Great Captains.

But whither shall we turn for knowledge of their very selves? Not in the musty tomes of voluminous reports or censored recollections wherein they strove to immortalize their achievements. Nor yet in the countless histories where lesser wormish men have sought to snare their parted ghosts.

The great warriors were too busy and often too inapt to write contemporaneously of their exploits. What they later put on paper was colored by strivings for enhanced fame, or by political conditions then confronting them. War was an ebullition of their perished past. The violent simplicity in execution which procured them success and enthralled the world looked pale and uninspired on paper, so they seasoned it.

The race yearns to adore. Can it adore the simple or venerate the obvious? All mythology and folk-lore rise in indignant protest at the thought. The sun gave light; therefore he was not hot gas or a flame, but a god or a chariot. The ignus fatuus deluded men of nights. It was a spirit; nothing so simple as decomposition could serve the need.

So with the soldier, to pander to self love and racial urge he attributes to his acts profound thoughts which never existed. The white-hot energy of youth which saw in obstacles but inspirations and in the enemy but the gage to battle, becomes to complacent and retrospective age the result of mathematical calculation and metaphysical erudition; of knowledge he never had and plans he never made.

With the efforts of the historians the case is even worse. Those who write at the time are guilty of partisanship and hero worship. While those who write later are forced to accept contemporaneous myths and to view their subject through the roseate light which distance, be it that of time or space, sheds ever to deprive us of harsh truth. In peace the scholar flourishes, in the war the soldier dies; so it comes about

that we view our soldiers through the eyes of scholars and attribute to them scholarly virtues.

Seeking obvious reasons for the obscure, we analyze their conduct as told by historians and assign as reasons for their success apparent, trivial things. Disregarding wholly the personality of Frederick we attribute his victories to a tactical expedient, the oblique order of battle. Impotent to comprehend the character of Rome's generals, a great historian coins the striking phrase: "At this time the Roman legionary shortened his sword and gained an empire." Our research is further muddled by the fabled heroism of all former fighters. Like wine, accounts of valor mellow with age, until Achilles dead three thousand years stands peerless.

Yet through the murk of fact and fable rises to our view this truth. The history of war is the history of warriors; few in number, mighty in influence. Alexander, not Macedonia, conquered the world. Scipio, not Rome, destroyed Carthage. Marlborough, not the Allies, defeated France. Cromwell, not the Roundheads, dethroned Charles.

Were this true only of warriors we might well exclaim: "Behold the work of the historian!" but it is equally the case in every phase of human endeavor. Music has its myriad of musicians but only its dozen masters. So with painting, sculpture, literature, medicine or trade. "Many are called, but few are chosen."

Nor can we concur wholly with the alluring stories in the advertising sections of our magazines which point the golden path of success to all and sundry who will follow some particular phase of home education they happen to advocate. "Knowledge is power," but to a degree only. Its possession per se will raise a man to mediocrity but not to distinction. In our opinion, indeed, the instruction obtained from such courses is of less moment to future success than is the ambition which prompted the study.

In considering these matters, we should remember that while there is much similarity there is also a vast difference between the successful soldier and the successful man in other professions. Success due to knowledge and personality is the measure of ability in each case; but to all save the soldier it has vital significance only to the individual and to a limited number of his associates. With the soldier, success or failure means infinitely more, as it must of necessity be measured not in terms of personal honor or affluence but in the life, happiness and honor of his men—his country. Hence the search for that elusive secret of military success, soul, genius, personality—call it what you will—is of vital interest to us all.

As has been shown, history and biography are of but limited assistance and the situation is still further complicated by other circumstances which we shall

now discuss. First, we must get an harmonical arrangement between two diametrically opposed views—namely, that there is "Nothing new under the sun" and that there is "Nothing old."

Referring to the first assumption, that of immutability, we refer to the tendency to consider the most recent past war as the last word, the sealed pattern of all future contests. For this theory we of the military profession are largely to blame. First we realize, none

Beyond question, personal knowledge is a fine thing; but unfortunately it is too intimate. When, for example, we recall a railroad accident, the picture that most vividly presents itself to us is the severed blue-gray hand of some child victim; not the misread signals which precipitated the tragedy. So with war experiences, the choking gas that strangled us sticks in our memory to the more or less complete exclusion of the important fact that it was the roads and consequent abundant mechanical transportation peculiar to western Europe which permitted the accumulation of enough gas shells to do the strangling.

Even when no personal experience exists, we are bound to be influenced by the most recent experience of others. Because in the Boer War the bayonet found no employment, we all but abandoned it, only to seize it again when the Russo-Japanese conflict redemonstrated its value. Going back farther, we might point countless other instances of similar nature, as witness the recurrent use and disuse of infantry and cavalry as the dominant arms according to the most recent "lesson" derived from the last war based invariably on special conditions, in no way bound to recur, yet always presumed as immutable.

So much for the conservatives; now for the optimists: The "Nothing old" gentry. These are of several species, but first in order of importance come the specialists.

Due either to superabundant egotism and uncontrolled enthusiasm, or else to limited powers of observation of the activities of other arms, these people advocate in the most fluent and uncompromising manner the vast future potentialities of their own weapon. In the next war, so they say, all the enemy will be crushed, gassed, bombed or otherwise speedily exterminated, depending for the method of his death upon the arm to which the person declaiming belongs. Their spectacular claims attract public attention. The appeal of their statements is further strengthened because they deal invariably in mechanical devices which intrigue the simple imagination, and because the novelty of their schemes and assertions has a strong news interest which insures their notice by the press. Earlier examples of this newspaper tendency to exploit the bizarre is instanced in the opening accounts of the Civil War where "masked batteries" and "black horse cavalry" seemed to infest the whole face of nature.

Both the standpatters and the progressives have reason of sorts, and as we have pointed out, we must seek to harmonize the divergent tendencies.

A British writer has said: "The characteristic of war is its constant change of character," but as is ever the case with aphorisms his remark needs explanation. There is an incessant change of means, to attain the inevitable end, constantly going on; but we must take care not to let these inevitable sundry means, past or predicted, attain undue eminence in the perspective of our minds. Since the beginning, there has been an unending cycle of them, and for each, its advocates have claimed adoption as the sole means of successful war. Yet the records of all time



Stonewall Jackson—In War the Right Man is Everything.

better, that in the last war it was necessary to make many improvisations and to ply our trade with ill-assorted tools. We then read our books and note with a thrill of regret that in the war next preceding our own experience: "Things ran with the precision of a well-oiled machine," for so the mellowing influence of time has made it appear to our authors.

In our efforts to provide for the avoidance, in future, of the mistakes which we personally have encountered, and to insure to ourselves or to our successors the same mathematical ease of operation of which we have read, we proceed to enunciate rules. In order to enunciate anything we must have a premise. The most obvious is the last war. Further, the impressions we gained there were the most vivid we have ever experienced; burned on the tablets of our memories by the blistering flash of exploding shell, etched on our souls by the incisive patter of machine gun bullets, our own experiences become the foundation of our thoughts and, all unconscious of personal bias, we base our conceptions of the future on our experience of the past.

show that the unchanging ends have been, are, and probably ever will be, the securing of predominating force, of the right sort, at the right place, at the right time.

In seeking a premise for the enunciation of rules for the employment of this predominating force, we must cull from the past of our experience or reading the more permanent characteristics, select our weapons and assign to them that importance which reason and the analogy of experience indicate that they will attain. Bearing in mind these considerations and the definition of predominant force, we shall resume our search for success in war.

No matter what the situation as to clarity of his mental perspective, the conscientious soldier approaches the solution of his problem more or less bemuddled by phantoms of the past, and deluded by unfounded or unproved hopes for the future. So handicapped, he assumes the unwonted and labored posture of a student, and plans for perfection, so that when the next war comes that part of the machine for which he may be responsible shall instantly begin to function with a purr of perfect preparation.

In this scholarly avocation, soldiers of all important nations use at the present time what purports to be the best mode of instruction—the applicatory method. The characteristics of some concrete problem are first studied in the abstract and then tested by applying them, with assumed forces and situations, in solving analogous problems either on the terrain or on a map representation of it. This method not only familiarizes the student with all the tools and technicalities of his trade, but also develops the aptitude for reaching decisions and the self assurance derived from demonstrated achievement.

But as always there is a fly in the amber. High academic performance demands infinite intimate knowledge of details, and the qualities requisite to such attainments often inhabit bodies lacking in personality. Also, the striving for such knowledge often engenders the fallacious notion that capacity depends upon the power to acquire such details rather than upon the ability to apply them. Obsessed with this thought, students plunge in deeper and ever deeper, their exertions but enmeshing them the more until, like mired mastodons, they perish in a morass of knowledge where they first browsed for sustenance.

When the prying spade of the unbiased investigator has removed the muck of official reports and the mire of self-laudatory biographies from the swamp of the World War, the skeletons of many such military mammoths will be discovered. Amid their mighty remains will lurk elusive the secret of German failure. Beyond question no soldier ever sought more diligently than the Germans for prewar perfection. They builded and tested and adjusted their mighty machine and became so engrossed in its visible perfection, in the accuracy of its bearings and the compression of its cylinders, that they neglected the battery. When the moment came, their masterpiece proved inefficient through lack of the divine afflatus, the soul of a leader. Truly in war "Men are nothing, a man is everything."

Here we must deny that anything in our remarks is intended to imply belief in the existence of spontaneous untutored inspiration. With the single exception of the divinely inspired Joan of Arc, no such phenomenon has ever existed, and as we shall show, she was less of an exception than a coincidence. We require and must demand all possible thoughtful preparation and studious effort, so that in war our officers may be equal to their mighty trust—the safety of our country. Our purpose is not to discourage such preparation but simply to call attention to certain defects in its pursuit. To direct it not towards the glorification of the means—study; but to the end—victory.

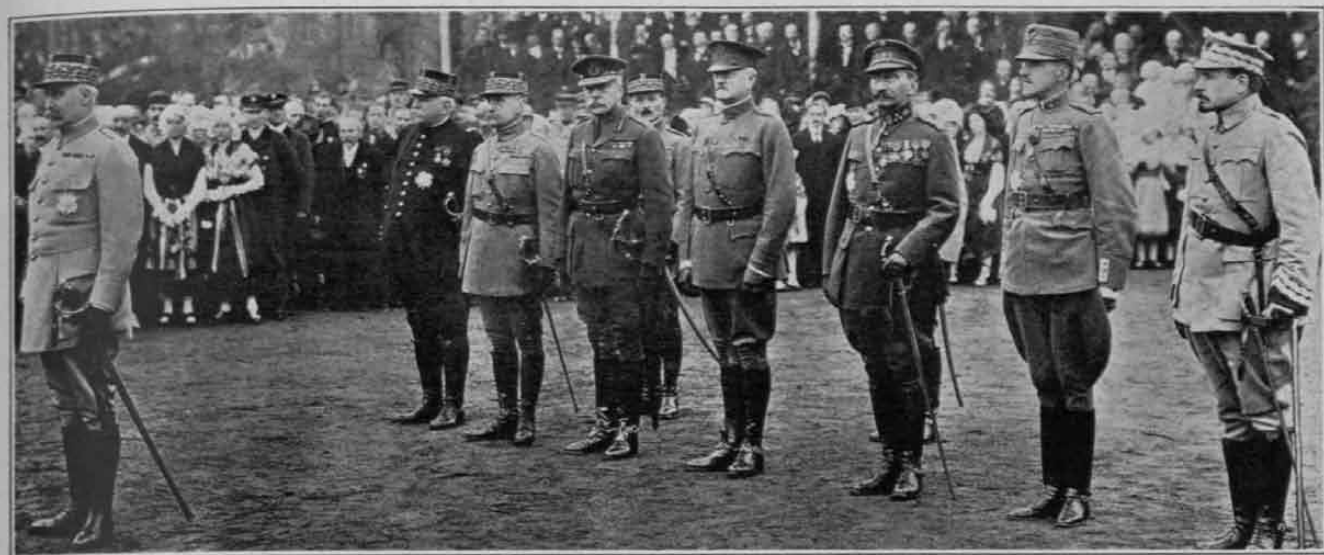
In acquiring erudition we must live on, not in, our studies. We must guard against becoming so engrossed in the specific nature of the roots and bark of the trees of knowledge as to miss the meaning and grandeur of the forests they compose. Our means of studying war have increased as much as have our tools for waging it, but it is an open question whether this increase in means has not perhaps obscured or obliterated one essential detail: namely, the necessity for personal leadership.

Hannibal, Caesar, Heraclius, Charlemagne, Richard, Gustavus, Turenne, Frederick, Napoleon, Grant, Lee, Hindenburg, Allenby, Foch, and Pershing were deeply imbued with the whole knowledge of war as practiced at their several epochs. But so were many of their defeated opponents; for as has been pointed out, the success in war lies not wholly in knowledge. It lurks invisible in that vitalizing spark, intangible, yet as evident as the lightning—the warrior soul.

There is no better illustration of the potency of this vitalizing element than is portrayed in the story of the "Maid of Orleans." For more than ninety years prior to her advent, the armies of France had suffered almost continuous defeat at the hands of their British opponents. The reason for this state of things lay not in the inferiority of French valor, but in the re-appearance of the foot soldier armed with the missile weapon—the long bow—as the temporary dominating influence on the battlefield. As a result of the recurrence of this tactical condition, France suffered almost continuous defeats, with the result that her people lost confidence, and developed an inferiority complex. Then came Joan, whose flaming faith in her heaven-sent mission rekindled the national spirit. Yet, great as were her powers, it is idle to suppose that, all unschooled in war as she was, she could have directed unaided the energy she produced. Like the fire beneath the boiler, she produced the steam; and ready to her hand she found competent machinery for its utilization in the shape of those veteran soldiers, Dunois, La Hire, and Saint Railles. The happy coincidence of her ignorant enthusiasm and their uninspired intelligence produced the phenomenal series of victories which freed France.

We shall now seek to evaluate and place in their just ratio the three essentials to victory—inspiration, knowledge, and force (mass).

Napoleon won many battles with numbers inferior



Pétain Receives the Marshal's Baton. "Many Are Called But Few Are Chosen."

to the enemy; he never lost a battle when he was numerically superior. In other words, even his transcendent ability was not equal, on every occasion, to the task of counterbalancing numerical inferiority. When he was confronted with the admittedly incapable Austrian generals of 1796 he destroyed armies; while later, particularly after 1805, his victories were far less overwhelming. So with Caesar. Against the Nervae, he was a consuming flame; against Romans, a successful contender. Grant in the Wilderness was as nothing compared to Grant at Donaldson or before Vicksburg. Here we have three soldiers of the highest type, both mentally and spiritually. By way of contrast we may note how the learned but uninspired Prussians of 1870 triumphed over the poorly led French, while in 1914 their equally learned and uninspired descendants were far less successful in the face of better opposition.

We may therefore postulate that no one element—soul, knowledge, or mass—is dominant; that a combination of any two of these factors gives a strong presumption of success over an adversary who relies on one alone, while the three combined are practically invincible against combinations of any other two. Comparing our own resources as to mass with those of any possible opponent or group of opponents, we strike at least a balance. The demonstrated ability of our trained leaders in past wars shows that so far as education is concerned, our officers have no superiors and few equals. This being so, victory will fly to or desert our standards in exact proportion to the presence or absence, in our leaders of the third attribute.

War is conflict; fighting is an elemental exposition of the age-old effort to survive. It is the cold glitter of the attacker's eye, not the point of the questing bayonet, that breaks the line. It is the fierce determination of the driver to close with the enemy, not the mechanical perfection of the tank, that conquers the trench. It is the cataclysmic ecstasy of conflict in the flier, not the perfection of his machine gun, which drops the enemy in flaming ruin. Yet volumes are devoted to armament; pages to inspiration.

Since the necessary limitations of map problems inhibit the student from considering the effects of hunger, emotion, personality, fatigue, leadership, and many other imponderable yet vital factors, he first neglects and then forgets them. Obsessed with admiration for the intelligence which history has ascribed to past leaders, he forgets the inseparable connection between plans, the flower of the intellect, and execution, the fruit of the soul. Hooker's plan at Chancellorsville was masterly, its execution cost him the battle. The converse was true at Marengo. The historian, through lack of experience and consequent appreciation of the inspirational qualities of generals, fails to stress them, but he does emphasize their mental gifts, which, since he shares, he values. The student blindly follows, and hugging the notion of mentality, pictures armies of insensate pawns moving with the precision of machines and the rapidity of light, guided in their intricate and resistless evolutions over the battlefield by the cold effulgence of his emotionless cerebrations as transmitted to them by wire and radio through the inspiring medium of code messages. He further assumes that superhuman intelligence will translate those somber sentences into words of fire which will electrify his chessmen into frenzied heroes who, heedless of danger, will dauntlessly translate the still-born infants of his brain into deeds.

Was it so that Caesar rallied the Twelfth Legion? Could the trackless ether have conveyed to his soldiers the inspiration that Napoleon imparted by his ubiquitous presence when before Rivoli he rode five horses to death, "To see everything himself?" Staff systems and mechanical communications are valuable, but above and beyond them must be the commander; not as a disembodied brain linked to his men by lines of wire and waves of ether, but as a living presence, an all-pervading, visible personality. The unleavened bread of knowledge will sustain life but it is dull fare unless seasoned by the yeast of personality. Could seamanship and shooting have made the Bon Homme Richard prevail over the Serapis or have destroyed the French fleet in Abukar Bay, had Paul Jones and

Horatio Nelson been other than they were? What intellectual ghost replete with strategem could have inspired men as did these two, who in themselves have epitomized not only knowledge of war but the spirit of battle? In defining the changeless characteristics of war we mentioned force, place, and time. In our calendar of warriors, Napoleon Bonaparte and Stonewall Jackson stand preeminent in their use of the last of these—time. Of the first his soldiers boasted: "He wins battles more with our legs than with our bayonets," while Jackson's men proudly called themselves "Old Jack's foot cavalry."

Shrewd critics have assigned military success to all manner of things—tactics, shape of frontiers, speed, happily placed rivers, mountains or woods, intellectual ability, or the use of artillery. All in a measure true, but none vital. The secret lies in the inspiring spirit which lifted weary footsore men out of themselves and made them march forgetful of agony, as did Messena's division after Rivoli and Jackson's at Winchester. No words ever imagined could have produced such prodigies of endurance as did the sight of the boy general, ill, perched on his sweating horse, or of the stern puritan plodding ever before them on Little Sorrel. The ability to produce endurance is but an instance of that same martial soul which arouses in its followers that resistless emotion defined as *élan*, the will to victory. However defined, it is akin to that almost cataleptic burst of physical and mental exuberance shown by the athlete when he breaks a record or plunges through the tacklers, and by the author or artist in the creation of a masterpiece. The difference is that in the athlete or the artist the ebullition is auto-stimulated, while with an army it is the result of external impetus—leadership.

In considering war we must avoid that adoration of the material as exemplified by scientists who deny the existence of aught they cannot cut or weigh. In war tomorrow we shall be dealing with men subject to the same emotions as were the soldiers of Alexander; with men but little changed for better or for worse from the starving shoeless Frenchmen of the Italian campaign: with men similar, save in their arms, to those whom the inspiring powers of a Greek or a Corsican changed at a breath to bands of heroes, all-enduring and all-capable.

No! History as written and read does not divulge the source of leadership. Hence its study often induces us to forget its potency. As a mirror shows us not ourselves but our reflection, so it is with the soul and with leadership; we know them but by the acts they inspire or the results they achieve. Like begets like: in the armies of the great we seek the reflection of themselves and we find Self-confidence, Enthusiasm, Abnegation of Self, Loyalty, and Courage.

Resolution, no matter how adamant, mated to knowledge, no matter how infinite, never beget such a progeny. Such offspring arises only from blood lines

as elemental as themselves. The leader must be incarnate of them.

The suggestion of Nicodemus as to rebirth (John III 3 to 6) is not the only means of producing such a leader. There are certainly born leaders, but the soldier may also overcome his natal defects by unremitting effort and practice. Self-confidence of the right sort as differentiated from bumptious presumption based on ignorance, is the result of proved ability, the sense of conscious achievement. Its existence presupposes enthusiasm, for without this quality no one could endure the travail of acquiring self-confidence. The enthusiasm which permits the toil and promises the achievement is simply an all-absorbing preoccupation in the profession elected. Endurance too is linked with self-confidence. Mentally it is the ability to subvert the means to the end, to hitch the wagon to a star and to attain it. Physically it presupposes sufficient enthusiasm to force on nature, no matter how reluctant, the obligation of constant bodily fitness through exercise. The expanding waist line means the contracting heart line; witness Napoleon at and after Jena. Abnegation of self seems perhaps incongruous when applied to such selfish persons as Frederick or Napoleon, but this is not the case. Self can be subordinated to self. The Corsican, leading his grenadiers at Lodi, subordinated the life of Bonaparte to the glory of Napoleon. Loyalty is frequently only considered as faithfulness from the bottom up. It has another and equally important application, that is from the top down. One of the most frequently noted characteristics of the great who remained great is unforgetfulness of, loyalty to their subordinates. It is this characteristic which binds with hoops of iron their juniors to them. A man who is truly and unselfishly loyal to his superiors is of necessity so to his juniors, and they to him.

Courage, moral and physical, is almost a synonym of all the foregoing traits. It fosters the resolution to combat and cherishes the ability to assume responsibility be it for successes or failures. No Bayard ever showed more of it than did Lee after Gettysburg.

But as with the Biblical candle, these traits are of no military value if concealed. A man of diffident manner will never inspire confidence. A cold reserve cannot beget enthusiasm, and so with the others there must be an outward and visible sign of the inward and spiritual grace.

It then appears that the leader must be an actor, and such is the fact. But with him, as with his bewigged compeer, he is unconvincing unless he lives his part.

Can men then acquire and demonstrate these characteristics? The answer is they have—they can. For "As a man thinketh so is he." The fixed determination to acquire the warrior soul, and having acquired it, to conquer or perish with honor, is the secret of success in war.

Coast Artillery Target Practice

Lieut.-Col. F. R. McReynolds, 979th C. A. (AA)

MAY I approach this subject from a non-technical point of view, and if errors of consequence affecting the technique of target practice shall appear, let it be understood that no claims have been made as to an intimate, professional knowledge of the exact details involved in this very vital subject. Should a healthy, friendly and informative discussion ensue which will tend toward value to the service in respect to the conduct of target practice with the materiel assigned to us, then my humble efforts may not be entirely in vain.

Although it has long seemed to the writer that the methodical following of a timeworn system of practice in service firing, and the following of hypothetical courses, in most instances in simulated practice, does not tend to efficiency in battle, I have been particularly struck by the recent statement in the *Coast Artillery Journal* as to the methods followed by the Japanese, in which the use of naval vessels in the towing of targets for practice is noted. Surprise—that most vital of strategy in military contests, has been and will ever be a most important element in the winning of a combat. Although a surprise attack at the outset of war seems improbable, if it should occur it would afford no time, in the case of our seacoast artillery, for the calibrating of guns, the blending of powder, the training of plotting room and observing details, nor would an enemy raider or fleet, travel sedately across the field of fire, at a fixed and steady speed, on fixed courses, and well within the effective range of our guns. I am not familiar with the system used by the Navy in the preparation of ammunition and especially powder charges for service, but from observation with the Battle Fleet recently, in both night and day maneuver and firing, it is certain that preparedness to the nth degree has been their earned objective and goal. It does seem, therefore, that that same degree of preparedness might well be always the objective of our harbor defense troops.

It would appear possible and desirable that a more effective contact might be brought about between these two most important elements of our sea coast defense. Particularly is this true since the Navy must rely on an effective personnel as near perfectly trained as they themselves are, to back them as far as our shore lines are concerned. It might well be possible to secure such cooperation and assistance in our target practice methods as would afford a swift destroyer or other type craft to tow our targets across the field of fire at approximate speeds and courses which would be assumed by enemy craft under actual battle conditions. In this connection also, it might well be possible that Naval craft could and would cooperate to the extent of providing a safe and clear field of fire free from such bug-

bears as fishing craft, pleasure boats and commercial steamers which of necessity were not compelled to proceed on that particular lane or course. If it appear possible and reasonable that courses be "staked" out for amateur racing events, and from which all craft are barred, may not the vitally important target practice of the Coast Artillery receive the same consideration and result? This does not take into account the handicapping elements over which we may have no control, i. e., fog, haze, winds, etc., but it is certain that the enemy, under war conditions, will avail himself of any such advantage that may be the means of accomplishing a desired end. To extend the problem to a sure, or as near sure, training under all conditions as might be possible, it would seem desirable to go even so far as to initiate and carry out joint maneuvers with the Navy which would comprehend battle conditions of fog and haze, and by simulating firing in these cases and establishing an exact system of time and record keeping, it might be possible to secure theoretical "hits," or in any event, such practical training as would be of inestimable value under actual service conditions. To accomplish this latter result, we might compare the log of the Navy vessel, travelling over our charted areas (with which, of course, he has been furnished a copy) and time and course as compared with the second of simulated firing of each battery to determine whether or not any results may have been secured.

Having presented the idea, may I invite attention to some of the discouragements and handicaps incident to such a system of practice:

1st. That school of thought, which has been extant in our Service for many years, tending to the belief that what is and has been is good enough; that competition based on certain exact rules of procedure is essential to ultimate success; and other reasonable and time-tried theories with which there can be no quarrel.

2nd. The practical consideration of expense involved in securing towing craft to propel the targets on the course and at a speed commensurate with the probabilities of battle.

3rd. The maintenance of a clear field of fire.

4th. Detailed considerations of powder blending, calibration of guns, training of personnel, preparations of the individual pieces (filling of recoil cylinders, dismantling of breech blocks, etc.)

As to the first consideration—that of the crystallized thought of many of our best officers that the present system of target practice is correct and should be continued—I venture to assert that there are few, if any, officers in the regular establishment at least, who do

not place the Team above all other considerations, i. e., the efficiency of the target practice methods best adapted to success in battle, above any consideration of personal thought or belief. They very properly demand to be shown. It is a trite saying, but of proven worth, that the man who says it can't be done, is constantly being interrupted by the man who does it. Hence it is believed that a large majority of our officers are willing that a new idea or method shall have a fair and impartial trial if basically worthy of such consideration, and if it proves itself, that it shall be continued in place of something which may not be as good. It is therefore my belief that the plan could be given a fair trial, even by those who may not believe in its ultimate success.

Second: In view of the selfish interest which might be imputed to the Navy, (and I daresay that the most hopeful and loyal of us can picture these splendid ships fading out of view through our observing station lens, enroute to battle, returning anon with battered and war-torn wounds, seeking haven under the guns of our defenses for refuelling, repairs, and reinforcement of personnel), it is reasonable to expect that they, the Navy, would enter into the spirit of a new plan for target practice, furnish suitable vessels for towing targets, and for playing such other war games as might tend to increase the efficiency of our personnel under all conditions which might be presented in actual warfare. Certainly it would be as much to their interest as to ours. Of course, it has never been my lot to serve on that staff duty which contacts with plans for such disposition, and it may have already been tried, and failed.

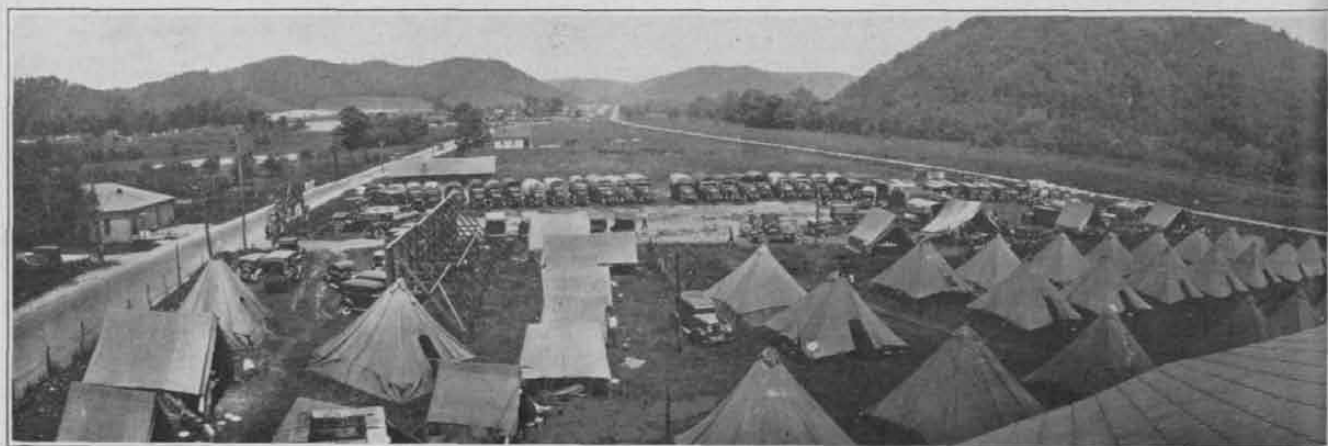
Third: The maintenance of a clear field of fire. No insurmountable difficulties were presented during the recent international yacht races. Naval craft maintain suitable cleared courses for submarine and destroyer

runs. No tender-hearted civilian howls when the Thames is cleared for the Yale-Harvard races.

It appears to be a matter of reasonable accomplishment, and should some commercial line be handicapped the Freedom of the Seas is yet not denied them, for there are other courses which they may follow, rather than under the guns of a too seldom used battery of harbor defense guns.

I know of some civilians who complain at the firing of the guns, who manufacture excuses for petty and other claims against the government thereby, and have even heard of a claim for the destruction of an automobile parked under a crumbling bank which gave way hours before the actual firing of the guns. These are flimsy excuses which the element of time and patience and tact and good judgment may overcome.

And, lastly, the element of material and personnel: One can conceive of the "surprise" practice day arriving to find the star plotter absent on pass, the materiel not ready, powder unblended and a dozen other reasonable excuses for failing to try the plan. But most of us know that days before a contemplated inspection, for instance, barracks have been turned upside down, scrubbed and prepared for the expected day. Batteries ransacked in every corner to place them in the best of condition. Might it not be possible therefore that P (practice) days or dates could be set aside, within the reasonable limits of which powder could be blended and retained for its sure use within a reasonable period, guns overhauled, breech mechanisms prepared for the filling of key positions which might temporarily be vacant by reason of leave, sickness, etc.? I would venture to say that in many such cases the substitute, afforded an opportunity to "make good" would prove to be as good or better than the star man on whom we had placed so much of reliance. At least it would afford that much of a degree of opportunity for some dark horse for the occasion.



The Camp of the 61st C. A. (AA) at Morehead, Kentucky

Current Events Overseas

Edited by Lieut. Col. Herman Beukema, Professor, U. S. Military Academy

THE news of the month is more disturbing than for any similar period in six years. Evidence accumulates rapidly that the friends of peace will presently find themselves once more in the background from which they emerged in 1924 when Poincaré's *tour de force* in the Ruhr Valley died in the Dawes Plan.

We note the final success of Mussolini's policy, inaugurated four years ago, through which he has linked by a series of interlocking treaties and agreements Austria, Hungary, Greece, and Turkey as a counterpoise to the Little Entente. Litvinov bolts the Geneva Conference of the Preparatory Disarmament Commission to confer with the Il Duce—an open step in the Italo-Russian diplomatic maneuvers. Mr. Gibson, United States ambassador to Belgium, making a last effort to bring France and Italy into the fold of the Powers who will reduce their navies, finds himself talking to deaf ears. Germany, stepping up her program of cruiser construction, makes no concealment of her intentions that at the first favorable opportunity she will re-arm on a scale comparable to that of her neighbor.

Most interesting is the news from France, guardian of the status quo. Since 1926, an unbroken stream of gold has poured into the vaults of the Bank of France from every quarter of the globe. There it has been "sterilized" by means of taxes on loans so heavy as to block its exportation. So large is that total today that it constitutes a per capita reserve far exceeding that of any other country. It threatens to upset the gold standard of more than one Great Power. France makes no secret of her resolve to oppose to the limit the growing demand for the revision of the treaties which terminated the World War, and straightway finds her relations with Germany and Italy, chief protagonists of revision, growing more strained.

At the bottom of every war since the first stone-ax was fashioned we find fear, hate, and ambition, either singly or in combination. All those elements are present today, rendered peculiarly acute by the weight of a world economic slump, which in its severity and duration has produced almost universal suffering. Estimate it as we will, we cannot close our eyes to the behavior of the world markets for international loans. The New York market, which in recent years has often topped the billion mark in the flotation of foreign bonds, petered down to zero in that respect for the month of October, at the end of a three months' drying-up process. Moreover, the quotations on listed foreign bonds slump discouragingly on every market.

War scares have always been the order of the day

in Europe, but this time the unprejudiced observer is led to believe that the League of Nations will face its most severe test at a date not far distant. Economic recovery may come in time to relieve the tension, and the crisis may, in any event, be turned aside by a united stand of the Great Powers. But that such danger exists to a degree more serious than at any time since 1918 is undeniable.

Of major importance also are the latest symptoms of break-up in the British Empire. The Imperial Conference fiasco did more than kill the hopes of closer trade relations within the Empire; it all but cut the last of the tangible political links between the Dominions and the mother country. Only the blood which is thicker than water remains as a bond, if we accept the view of the British press. India, a unit at last in her clamor for autonomy, Palestine, and Egypt add to Britain's heavy store of troubles. If it were not for the fact that Britain's long and checkered history is filled with examples where, by force or maneuver, she has emerged successfully from crises at least as severe as the present, one might be led to join the pessimists who predict the early end of her greatness.

The British Empire

R. B. R.

The Imperial Conference. The Imperial Conference has failed. The months of "preparation" produced no single point of agreement on vital matters between Great Britain and the Dominions. Before the adjournment of the Conference, November 14, arrangements had been closed for a conference in Ottawa next year. Aside from the arrangements for the Ottawa Conference, definite economic results of the parley are limited to a three-year extension of present preferential margins on Empire goods and certain tentative moves toward trade reciprocity between Canada, Australia, New Zealand, and the Union of South Africa. We might add the sigh of relief on the part of Denmark, Russia, Germany, and the grain-producing states in the Balkans, which had been fearful of the immediate loss of a good customer for their farm products.

The last leading strings from the mother country were cast off by the conference decisions removing from the British Government the right of interference with the Dominions in their foreign or intra-Empire relations, domestic legislation, and the appointment of Governors General. Those officials are still to be appointed by the King, but his selection must be made from a list submitted by the Dominion concerned in each case. By this decision, the King remains as the

sole concrete political link between homeland and Dominions—and curiously, more a monarch as The Imperial Sovereign than as titular ruler of England.

Indian Round Table Conference. The Conference opened on November 12 with representatives of every important class of Indians present. Two major plans were advanced for consideration, based on the Simon Report and the proposals of Lord Irwin. They differ essentially in the fact that Sir John Simon would move slowly, Lord Irwin rapidly, toward full dominion status. Both agree on the necessity of continuing British control over the army, finance, and foreign relations for an indefinite period.

The Indians want none of this temporising. Promising loyalty to the Empire and substantial trade preferences as well if they can have their way, they threaten boycott and disorder if they are refused. Tempers were frayed when Lord Peel, speaking for the Conservatives, clearly showed the hostility of his party toward Indian hopes of self-government. Lord Reading for the Liberals, and Prime Minister MacDonald, more sympathetic in their views, quieted the tumult. The various Indian elements are apparently drawing closer together, and may be able to enforce their demands.

United Kingdom. Parliament assembled on October 28. The hope of economic revival, which attended Labor's rise to power in 1929, is utterly dissipated in the present worldwide depression. Labor's hold on power grows more precarious as the Conservatives in local and by-elections win repeatedly. Troubles are so numerous and varied that the British citizen is left in a fog. If a general election can be staved off a bit, as probably will be the case, the issues may clarify for a clean-cut decision.

Western Europe

D. A. F.

League of Nations. The French press jubilantly records a victory for the exponents of peace (and security) in the adoption by the Preparatory Disarmament Commission of a plan to limit armaments by the budget route on November 21. Only the United States and Japan stood in opposition, although there were numerous abstentions in the voting. There was scant support throughout the discussion for the position maintained by Ambassador Gibson, for the United States, that disarmament can be measured only in terms of ships, guns, and fighting men, whatever their cost.

The opening of the seventh session of the Preparatory Commission for the League of Nations Disarmament Conference at Geneva on November 6 flooded the world with discussions on the causes of war and proposals for the prevention of war. Little actual progress has been made during the past twelve years in the reduction of armaments. Thorough investigations have revealed limitation of armaments as an incredibly complex problem. The issues between conscript and volunteer armies, between inclusion and exclusion of

reserves, between direct and budgetary limitation of materiel, are based on the continuation of means similar to those that existed in 1918. Yet it is clear that new means of waging war—aircraft, chemicals, and armored fighting machines—have developed far more rapidly than have the measures for their limitation.

Such turmoil as the Commission has not witnessed in the six years of its existence, developed on November 27, when the chief French delegate introduced a motion to include a clause providing that nothing in the proposed treaty should release Germany and her late allies from the terms of the Versailles Treaty. Bitterly opposed by the German delegates, French and British influence was sufficient to secure adoption of the principle that the general disarmament convention shall not affect the validity of previous treaty engagements. On December 2 the Commission completed its task of drafting a general disarmament scheme.

However, the plan, which must ultimately come before the assembly of the League of Nations for consideration, is far from adoption. Not only are Japan and the United States firmly opposed, but no feasible method of budgetary supervision seems possible. Russia flatly declares that she will never submit to such control.

France. France appears to be the last important nation to feel the effects of the World depression. One reason is that France had its real crisis four years ago when the franc all but followed the mark to oblivion, and settlement was finally obtained by amputating four-fifths of the country's internal debt through stabilization at one-fifth of the franc's pre-war value. But last week the official statement of French imports and exports for the first ten months of this year was published. It showed a total decrease of over \$396,000,000 compared with the same period last year.

The government took quick measures to restore public confidence when banks began to fail in the early part of November. The first failures were mostly on the part of banks which were closely allied with the highly speculative Oustrie undertakings. But when the Adam bank, one of the oldest in France, suspended payment, the government attempted at once to reopen it. Financial and political leaders made haste to declare that the country was fundamentally sound. Whether such intervention will have greater effect than similar measures in our own country, is not yet determinable. However, the immediate flurry seems to have passed.

German feelers toward a moratorium on the Young Plan payments have met with scant sympathy. The French point, logically enough, to the fact that Germany's demand, at a time when she enjoys a steady and increasingly favorable trade balance, is ill-timed, especially since Germany made her Dawes Plan payments in the face of an adverse balance of trade.

Spain. Strikes and riots in Madrid, Barcelona, and every industrial center of Spain during the past month gave a further push toward the reestablishment of constitutional government. The demand for a change

of regime is assuming ominous proportions. It is not personal dislike of the King that is responsible for the out-breaks, but rather the fact that the monarchy is the nucleus about which gather all the forces of reaction. Some of the malcontents cry for a republic, others for communism, and few raise their voices to defend monarchy. Only the loyalty of the army keeps Alfonso on the throne.

Eastern Europe

G. M. B.

Russia. Hard on the heels of the thirteenth anniversary of the birth of modern Soviet Russia comes a flood of rumors forecasting a massed attack by a united Europe against the Russian state. It goes without saying that the rumors are of Russian origin. They are well-timed. The troubles of that state grow apace, both within and without. Peasant and proletariat see themselves driven at a pace which grows ever faster in order that the Five-year Plan may be forced through. And while the Russian people line up in queues, as they have done since 1919, to receive their scanty rations of the bare necessities of life, they see the products of their labor dumped on a glutted world market.

Meanwhile, foreign resentment over the dumping, which has disturbed every European commodity market as well as our own, grows stronger. That Briand, "Lawrence of Arabia," and Sir Henri Deterding—the petroleum czar of the British Empire—are hatching an anti-Soviet plot is a tale which may gain credence in Russia, but not elsewhere. It may distract the nation's attention for the time being from their growing unrest, news of which comes in the form of the reported assassination of Stalin, of peasant revolts, and mutinies in the Red army.

Poland. Marshal Pilsudski has won a signal victory in the elections to the Sejm, his party securing 247 out of a total 444 seats. Dictator of Poland for many years, he has now resigned as Premier, and at his own request has been appointed Minister of War. He remains, however, the dominant personality and power in Poland.

Central and Southern Europe

R. P. O.

Germany. Though the Reichstag was in adjournment and domestic political events were more or less at a standstill during November, Germany's aims in international affairs became more apparent. Germany is surrounded by countries more heavily armed, as a whole, than in 1913; and they show no serious intention of reducing their armaments. France, notably, strongest protagonist of the status quo and therefore of its principal props, the League of Nations and the Treaty of Versailles, seems more inclined to increase her forces. If the money can be found, Germany will have six cruisers of the Ersatz Preussen class in commission by 1936.

Chancellor Breuning has apparently developed some cohesion among the moderate center and left center groups of the Reichstag, and stands ready to face the attacks of Hitler's Fascists and Thalman's Communists. He will fight to the last ditch for his program of retrenchment and increased taxation, which has already received the unqualified approval of the Federal Council. As a last resort he can again resort to Article 48 of the Constitution, in short, dictatorship. His strong stand in this matter is improved by the increasingly favorable reaction of the general public. The German voter shows no little regret over the electoral debauch of Hitlerism. Moreover, Bruening's declaration that German government finances must be put in order before serious consideration of a moratorium on the Young Plan payments is possible, wins increasing support. And Germany's friends note a steadily increasing export balance in her foreign trade.

Germany received with joy the announcement of the settlement of war claims against Germany at the Hague Court of Arbitration. Claims against Germany amounting to \$1,500,000,000 were settled for about one-tenth of that amount. Among the most important were the "Black Tom" and "Kingsland" explosion claims of the United States, which were decided in favor of Germany.

Austria. The elections on November 9 proved to be a severe setback for the Fascist-Heimwehr enthusiasts. For the first time in Austria, they abandoned their policy of abstaining from elections and entered the political field with a determination to win the elections. Under the leadership of Prince Starhemberg, minister of the interior, the Fascists went to the polls with high hopes; but they failed to make a real showing in the elections.

Hungary. The coming of age on November 20 of the Archduke Otto, eldest son of the last of Austria-Hungary's emperors, occasioned a flutter in more than one European capital. Rumors of a royalist uprising subsided when that scion of the Hapsburgs made it clear that his present ambitions are wrapped up in a diploma awaiting him at his University in Belgium if he passes his courses. The Treaty of Trianon, while raising no bar against the return of monarchy to replace the present regency, does forbid the seating of a Hapsburg on the royal throne.

Italy. Mussolini continues to keep Italy's political pot boiling with his fiery speeches. He seems to contemplate striking at the foreign policy of France in two ways. By building up a series of alliances in the Balkans to unite Bulgaria, Greece, Turkey and Hungary against the "Little Entente," he has threatened the supremacy of France in central and south-eastern Europe. By lending moral support to Germany in her efforts to gain military equality with France through revision of the Treaty of Versailles, Mussolini again has threatened French supremacy in Central Europe. His rapprochement with Russia grows more patent: Litvinov bolted the Preparatory Disarmament Conference to confer with Il Duce.

The Balkans and Near East

D. H. G.

Bulgaria. Since their return to Bulgaria, King Boris and his Italian bride have been achieving the popularity and propriety that modern subjects demand of their monarchs. Bad weather and religious dissension were the only disturbing notes in their reception. The Socialist party questioned the constitutionality of the King's act in complying with the Vatican's marriage conditions. However, the performing of another ceremony in the Orthodox cathedral silenced most criticism on that score.

Close observers feel nevertheless that the Pope, in allowing the new Bulgarian Queen so many dispensations, is making a determined bid to bring back Bulgaria, now the bulwark of the Eastern Orthodox Church, under the religious rule of Rome.

Turkey. That Turkey had made gigantic strides in modernization under Kemal Pasha's regime was vouchsafed by no less an authority than the Assistant Secretary of Commerce of the United States, Dr. Klein. During his recent visit to Turkey, this official expressed himself as astonished and pleased with achievements of the Turkish people. The President, Mustapha Kemal, continued his efforts, as outlined last month, to encourage foreign investments in his country. Overtures to American bankers for the flotation of a large loan are reported.

Turkey and Greece. Significant was the recent visit of the Grecian Premier, Venizelos, to Turkey and the consequent signing there of Turkish-Grecian treaties of amity and commerce. Both Venizelos and the pact, which provides for neutrality of one signatory in case of an attack on the other and also for conditional naval parity, were received with great acclaim by the Turks. Greece, too, rejoiced in the improved friendship with Turkey, although the Greek government was forced to jail ex-dictator Pangalos for what they claimed was a deep-laid scheme to nullify the pact.

Indicative of Italy's influence in the negotiations was the telegram of thanks sent to Mussolini by the Grecian premier and the Turkish foreign minister on the occasion of the signing.

The Far East

R. E. B.

China. Politics and diplomatic maneuver have taken the place, for the time being, of civil war. The elimination of Generals Feng Yuh Shiang and Yen Hsi Shan leaves the country under the divided control of Chiang Kai Shek, who now hold undisputed possession of the once rich South China provinces, and Chang Hsueh Liang, the Manchurian war lord.

No one suggests that this is the end of civil war in China. On the contrary, Chinese and foreigners alike consider a test of strength between these two inevitable. For the present there are conferences and parleys; Nanking makes certain "advances" to Manchuria to reimburse Chang for his outlay in coming to the Kuomintang's rescue at a critical moment to push Yen and Feng out of the picture, and there are other surface indications of amity between the two rivals.

Ten years of intermittent fighting, banditry, and pillage, topped off by the 1929 drought and famine, have left few pickings on the bones of China, except in the international settlements. The ousting of two war lords, Yen and Feng, had become an economic necessity. Various schemes are proposed to raise the funds needed to maintain the present armies, and to provide the minimum wherewithal for such government as exists.

Japan. The attempted assassination of the Japanese Premier, Hamaguchi, is both important and significant. Responsible in chief for the acceptance by the Privy Council of the London Naval Treaty, in which move he had the solid backing of the mass of the nation, this Liberal incurred the bitter enmity of the extreme militaristic elements.

Lead Fish

THE 2nd Observation Squadron, Nichols Field, P. I., has experienced a lot of trouble the past year with the tow target equipment. The greatest difficulty at the beginning of the target practice season was the fact that with the large B-9-A targets, the cable would kink and break when the target was released. Staff Sergeant O. W. Willcox finally exercised his ingenuity and invented a weight for the end of the cable, which consists of a lead "fish" on the end of a 12-inch rod which is fastened to the release and which prevents the cable from twisting and helps materially in keeping down the kinks.

During the month of November the 2nd Observation Squadron conducted a large number of two target and tracking missions with the 60th Coast Artillery at Fort Mills, Corregidor. Both day and night missions were flown. From November 3-8, a combined maneuver was carried out with the 60th Coast Artillery, both day and night attack missions being flown.



EDITORIAL



The New Coast Artillery Journal

THE appearance of the new COAST ARTILLERY JOURNAL marks the beginning of an epoch in its history—one of renewed promise and progress. No discussion is necessary as to its present form. The JOURNAL will appear hereafter as you see it here. It is the hope of those responsible for these changes that they will meet with the approval of its readers. It is believed that a brief explanation of the changes would be of interest.

If you are also a subscriber of the *Infantry Journal* and the *Cavalry Journal* you will note that these periodicals contain several articles in common. The common publication of articles of general interest is a result of a policy of editorial affiliation which has been under consideration for the past year. The editors of the three affiliated periodicals gave much thought to the problems which arose and believe that the method adopted will give satisfaction to our readers and at the same time will fit perfectly with the business details necessarily connected with the operation of a periodical.

In the beginning let it be said that no service journal will lose its identity nor will its editor be controlled or hampered by the action of any other editor. In brief, the scheme consists in the examination by an editorial board of a pool of articles submitted to the three publications, separately or otherwise. It is obvious that many articles submitted to any military periodical are of such a general nature that they can be used satisfactorily by all. After examination of articles of this nature the three editors approve or disapprove of certain of these for use in their particular magazine.

This plan has numerous advantages. It informs the readers of the three affiliated periodicals of the important activities and developments in other branches and meets the criticism often made by our readers that a service journal should contain a certain number of general articles in order that officers of one branch may be kept informed of the plans and conceptions of those of another.

Another distinct advantage lies in the fact that more articles become available for consideration and more opportunity is offered thereby to select those of greater merit and higher literary quality. In previous times all editors have had considerable difficulty in obtaining copy with sufficient merit to justify its publication. Since no service journals are financially able to employ correspondents the problems of the editors in securing high-class articles can be dimly visualized.

In line with the problem of securing manuscript is still another advantage which is the result of affiliation. At this time the COAST ARTILLERY JOURNAL announces a policy of payment for articles published in its pages, unless the author specifically decrees otherwise. Here-

tofore this policy has been sporadic and uncertain. All authors were not paid for their articles. It is admitted that payments were made with some reluctance. This was not due to any unwillingness on the part of the editor but was a policy of economy necessitated by the cash income of the JOURNAL. Under the affiliation scheme authors may expect a more substantial remuneration. If an article is accepted for the pool the amount paid will be tempting, especially in these times of insufficient pay.

Payments to authors is a step forward which we are enabled to make through financial saving effected by affiliation. Those familiar with printing costs know that a considerable part of the same may be charged to composition. Since the format of the three periodicals is identical the cost of composition of pool articles is divided among them. Not all the saving effected will go to the authors. A part of it will go to the authors. A part of it will be applied to improvement of the magazine itself—better paper, more reading matter, more illustrations, more pleasing appearance. Some of these improvements are apparent in this number. Others will follow as soon as the JOURNAL begins to hit its stride and various smaller problems are solved.

The Coast Artillery Corps

The enthusiasm which may, or may not be, inspired by the appearance of THE COAST ARTILLERY JOURNAL in its new form would be of small moment if accompanied by the unsatisfactory condition of the Coast Artillery Corps. At the beginning of a new year there is a general feeling of optimism and rejuvenation which seems to pervade its personnel. Major General John W. Gulick has been Chief of Coast Artillery less than one year. During this time he has studied the problems which confronted us and has been diligent in visiting Coast Artillery stations and activities in order to obtain first hand knowledge of existing conditions. Before the first year of his detail has expired he will have visited all stations where Coast Artillery activities are conducted. On these visits he has not neglected the National Guard, Coast Artillery Reserve Units, R. O. T. C. and C. M. T. Camps. The personnel of the Coast Artillery have been given an opportunity to speak with him informally and explain such difficulties as exist. Many changes have been made. He has reiterated and brought anew to the attention of the Corps the fundamental doctrines of harbor defense artillery. He has contested successfully any tendency towards the reduction of Coast Artillery personnel. He has stressed the importance of maintaining all weapons assigned to the Coast Artillery in a constant state of readiness. He has impressed the personnel on maintenance duty with a higher sense of responsibility and inspired them with a more thorough realization of the

importance of these duties. He has caused the various development activities with which the Coast Artillery is concerned to be concentrated at Fort Monroe under the Coast Artillery Board. He has interested himself in the improvement of the present fire control systems for seacoast artillery. There are other developments under study or awaiting favorable opportunity for adoption which will appear during the course of the year which we are entering. The energy with which all Coast Artillery problems are being attacked by the Chief of Coast Artillery, by the officers on duty in his office, and by Coast Artillery personnel everywhere gives promise of a year of progress and radiates a feeling of optimism which is inspiring.

The Coast Artillery Association

THERE is another project which arrived at fruition at the beginning of the present year which it is believed will have more effect on the future esprit of the Coast Artillery Corps than any event which has occurred previously in its history. We refer to the recent organization of the United States Coast Artillery Association. Information of the first meeting of the Association is given elsewhere in the JOURNAL. The activities to be undertaken by the Council will be the result of the deliberations of its Council. The Council asks for the hearty cooperation of the members of the Association and believes that the best interest of the Coast Artillery will be served when all of its personnel

are members of the Coast Artillery Association. This Cooperation is necessary and will be the main factor upon which the future success of the Association will be built. The success of the first meeting of the Association augurs well for its future. Yet it is realized that it is only the beginning and that without the wholehearted interest of all Coast Artillerymen the United States Coast Artillery Association will never be more than a gesture.

There is a peculiar inspiration in new undertakings which creates optimism and is a spur to greater accomplishments. With the beginning of a new year it is the note of optimism which sounds most clearly. A spirit of cooperation is growing within the Coast Artillery Corps which is making itself felt among regulars, national guard, reserves, officers, and enlisted men. The spirit of cooperation and responsibility is evident in all our activities. Upon the conclusion of his recent inspections the Chief of Coast Artillery has remarked many times upon the conscientious and efficient manner in which difficult but important duties are being performed, often under the most trying conditions, by officers and enlisted men at isolated stations. The best traditions of the Coast Artillery are formed from such instances of loyalty and devotion to duty. With a knowledge of the traditions of the past and a firm belief in the ability to create new traditions in the future the Coast Artillery Corps can face the coming year with confidence.

Studies to be Made for Protection from Air Attacks

THE Secretary of War, realizing that certain elements of the Infantry Division may be particularly vulnerable to attacks made by aircraft from low altitudes and that the present authorized armament may not provide adequate protection, has directed the Chief of Infantry, Chief of Field Artillery, Chief of Engineers and the Quartermaster General, each, to make a study on this subject.

He has called for definite recommendations from each as to what reorganization and rearmament are necessary to insure protection for all divisional units of their particular arm of service and particularly for the following:

The entire Field Artillery Brigade.

The field trains of all units.

The transportation units of the Quartermaster Regiment.

The entire Engineer Regiment.

The Chief of Ordnance and the Chief Signal Officer have also been called upon for comment as to the adequacy of the armament now provided the Ordnance Company and Signal Company in the protection of these units against low-flying aviation, particularly on the march.

COAST ARTILLERY ACTIVITIES

Office of Chief of Coast Artillery

Chief of Coast Artillery
MAJ. GEN. JOHN W. GULICK

Executive
COL. H. L. STEELE

Plans, Organization and Training Section

MAJ. J. B. CRAWFORD
MAJ. R. V. CRAMER
MAJ. S. S. GIFFIN
CAPT. J. H. WILSON
CAPT. H. N. HERRICK

Materiel and Finance Section

MAJ. J. H. COCHRAN
MAJ. C. H. TENNEY
CAPT. F. J. MCSHERRY

Personnel Section

MAJ. G. F. MOORE

Designation of Special Service School Air Corps Detachments

THE Secretary of War has directed that the Special Service School Air Corps Detachments be organized and designated as follows:

Detachment	Officers			Station	Assignment
		Mon	Airplanes		
Flight A, 16th Obs. Sqdn.	5	25	3	Langley Field, Virginia	Coast Artillery School
Flight B, 18th Obs. Sqdn.	5	25	3	Ft. Benning, Ga.	Infantry School
Flight C, 16th Obs. Sqdn.	5	25	2	Ft. Bragg, N. C.	Ft. Bragg, N. C.
Flight D, 18th Obs. Sqdn.	5	25	3	Fort Riley, Kansas	Cavalry School
Flight E, 16th Obs. Sqdn.	5	25	2	Fort Sill, Oklahoma	Field Artillery School

National Guard Coast Artillery Officers Commended

FIRST Lieutenant Henning B. Dieter, 213th Coast Artillery (Antiaircraft), Pennsylvania National Guard, and First Lieutenant James E. Sylvester, 198th Coast Artillery (Antiaircraft), New Hampshire National Guard, have been specially commended by Major General William G. Everson, Chief of the Militia Bureau, for their conscientious efforts and results attained at the Special Battery Officers' Course for Coast Artillery Officers of the National Guard and Organized Reserves, conducted at the Coast Artillery School, Fort Monroe, Virginia, September 6th to October 31, 1930.

Selection of Students for Army War College

THE Secretary of War has approved the policy for the selection of the students for the 1931-1932 Course at the Army War College.

Numbers are apportioned as follows:

Infantry	22
Cavalry	8
Field Artillery	8
Coast Artillery	8
Air Corps	4
Engineers	4
Signal Corps	1
Adjutant General's Department	1
Quartermaster Corps	2
Judge Advocate General's Department	1
Finance Department	1
Medical Corps	2
Ordnance Department	2
Chemical Warfare Service	1
To be selected by the Secretary of War	10
TOTAL	75

Qualifications for selection are as follows:

Efficiency rating of at least "Excellent;"
On General Staff Corps Eligible List or graduate of Army Industrial College;
Less than 54 Years of age;
Above grade of Captain.

Graduates of the Command and General Staff School will normally be required to serve at least two years after graduation before being eligible for the War College.

The Harbor Defenses of Boston

Col. A. Greig, Jr., 9th C. A.

IT should be stated first that the Harbor Defenses of Boston is on a caretaking basis, so our activity at present is overhauling of all of the armament. We have just completed this work. Every carriage (gun and mortar) has been dissembled in order that cylinders, pistons and piston rods might be thoroughly examined and proper notations entered in emplacement books. After thorough cleaning, all metal parts, including cylinder walls above the oil level, were well covered with Rust Preventive Compound, Grade A. All cylinders will be kept filled with hydroline as per printed instructions but arrangements should be made so that there will be no vacant space or pocket in the cylinders. There are twenty-seven batteries to be cared for including all caliber from 3" to 16" and mine equipment for two mine commands. To accomplish this work after taking out the necessary men who are permanently assigned as caretakers at the different posts and the necessary personnel for overhead, the balance of the personnel has been formed into a "Flying Squadron" which has been used to cover the work of the entire harbor defense.

A special detachment of Ordnance men are deloading and refilling high explosive projectiles (a nine month job). Another special Ordnance detail is cutting grooves behind rotating bands on all wide band projectiles. This work was completed about the end of November and this detail started on a surveillance test of all powder cans. This work will last for several months.

The Cable Ship JOSEPH HENRY has recently left the harbor defenses after repairing submarine cables damaged by commercial shipping dragging anchors. Due to the elements being so scattered, there being nine different forts, the communications system is a very important element of these defenses and at present more attention has been required than ordinarily. The Electrician Sergeants on duty here have their ability well tested in caring for communications, searchlights and k. w. sets.

The care and maintenance of unoccupied buildings (barracks and quarters) is a serious problem. We have had the assistance for a period of about two months of CO "L", 5th Infantry from Portland Harbor on this work. Operating from Fort Revere in the Town of Hull, Mass., they have painted wooden buildings, done considerable pointing on brick buildings, plastered insides of buildings, tinned and repaired roofs, made shutters, in fact where there were any indications of faults in the structures as indicated by plaster falling, leaky roofs or wind blowing through window frames, this outfit has diligently done everything possible to correct such faults. It is a pleasure to state here that these Infantry soldiers from the 5th Infantry while here displayed exceptional interest and zeal in connection with this work. Their morale was high and they certainly deserve commendation for the work they did.

Contrary to the general opinion that "L" Boats can not be kept running our "L" Boat has been on the job all summer normally making two round trips each day between Winthrop and Fort Revere touching at all island forts. This "L" Boat has been the only means of transportation of personnel and supplies.

The Station Hospital at Fort Banks is now the Corps Area Hospital. When Fort Banks was placed on a caretaking status the first of this year the barracks used formerly by the Headquarters Battery and the Post Exchange Building were converted into hospital annexes and many improvements have been made in these annexes and the main hospital. It is expected that very soon the construction work on the new addition to the Station Hospital, for which funds have been appropriated, will be started.

To any who are familiar with these harbor defenses it is known that there are many wartime temporary buildings. These are now being taken down. Along that line the principal work now is the demolition of the seven wartime buildings at Fort Heath (Winthrop Highlands, about one-half mile from Fort Banks) and the reconstruction of the caretaker's quarters there. With that job completed and the fine appearance of the Gun Batteries there, Fort Heath now presents the finest appearance it has since the war.

In closing we must mention the fact that for a month we were greatly helped by twelve men from the 11th Coast Artillery at Fort H. G. Wright. These men were principally used in the demolition of the buildings at Fort Heath.

Doubtless there are many officers and men in the Coast Artillery Corps who do not appreciate the importance of caretaking work. They would have a change of mind if they could go through what the caretaking detachment has gone through this summer in the Harbor Defenses of Boston.

Coast Artillery Reserves

Second Coast Artillery District, New York

WE are on the air again, announcing another month of progress in Reserve Activities. All regiments in the metropolitan area held dinners before troop school on November 17th. Major General Hanson E. Ely, Commanding Second Corps Area, was the guest of the 908th CA (AA) and Brigadier Gen. Henry J. Hatch, Commanding Second Coast Artillery District, and Colonel Frederick W. Stopford, executive Reserve affairs, Second Coast Artillery District, were the guests of the 539th CA (AA).

With the receipt of Special Text No. 26 and the courses in anti-aircraft gunnery, the instruction in troop schools has taken on a business-like attitude. Many of the worries of the Unit Instructor have been removed and where a regiment has a real true and capable Plans and Training officer, the unit instructor has been made happy to see how readily the Reserve Officers apply themselves to their task of acquiring knowledge essential to their military profession.

The 607th CA is having a marked success in an activity worthy of special mention. At the beginning of the school year a special class was organized to meet each week to assist the enlisted personnel to complete the subcourses in the Extension School required for their commissions. The attendance has been exceptionally good and the final results promised are very encouraging. This work is requiring a great deal of the time of capable instructors in the regiment and the 607th is particularly fortunate in having an organization with an esprit that produces results. This regiment is commanded by Colonel R. S. Allyn. Captain W. D. Wilkes, Captain George L. Clarke, 1st Lieut. F. B. DeGress and 2nd Lt. D. B. Wilson have been particularly active in this work of instruction.

The 521st CA with an attendance of twenty-six officers and six enlisted men launched an attack on Montclair, N. J., at its dinner and troop school on November 17th. This regiment has been meeting in Newark, N. J., in the headquarters of the 78th Division. The facilities offered by the quarters of the 78th Division were limited and it has been asking a great deal of them to have their offices upset each month. When the postmaster of Montclair learned of this, he urged that the 521st come to Montclair and use the civil service room in the Post Office. As the headquarters of the regiment and the gun battalion have been allocated to Montclair, it was decided to try out Montclair.

Following the above idea it was decided to see what could be done toward securing the support of the representative citizens of Montclair. To this end the following invited guests were present at the dinner preceding the troop school: The Mayor, the Commissioner of Public Safety, the Superintendent of Schools, and Colonel I. N. Lewis, inventor of the Lewis Gun, and well known to the older officers of Coast Artillery. In passing it should be mentioned that Colonel Lewis is very active in all community affairs and is a highly influential and respected citizen. Each guest made a fine short address on National Defense and assured the 521st CA of their full support in the efforts of the regiment to establish itself in Montclair.

It is not the policy of the regiment to try to take Montclair by storm but rather to have its influence and presence grow upon the people. To this end at dinner each month will be present some important persons of the city including representatives of local newspapers. At the proper time an organization will be formed for the purpose of having Montclair and vicinity adopt the 521st CA as its local organization and to actively support the regiment in many ways. The regiment has set as its objective the building up of an organization, admission to which will be actively sought after not only by Reserve Officers but by enlisted reservists who have unusual qualifications as prerequisites of requirements for commission.

NOTE. Montclair, N. J., is rather an exclusive residential section in the center of the area of New Jersey from which many business men commute to New York each day.

513th, 514th, and 522nd Coast Artillery (AA)

IF all formal applications for commission in and transfer to the Coast Artillery Reserve, which have been submitted to date, are approved, the combined strength of these regiments will be increased by a minimum of about twenty-five Reserve Lieutenants, as a result of the recent recruiting campaign. If all who are working for a commission and all who have made a formal application for transfer should eventually be commissioned in the Coast Artillery Reserve, this number would be raised to the neighborhood of fifty-five, or 47% of the total present commissioned strength of the three regiments. There are enough vacancies to absorb this number of additional Reserve officers.

Successful troop schools of the 52nd were held in Buffalo and Rochester on November 7th and 8th respectively.

The monthly troop school meeting of the 514th was held in Schenectady on November 24th with a large attendance. Average attendance for the three regular meetings of this regiment this fall has been exactly double the average attendance for last year.

Weekly meetings of the 514th were inaugurated in Schenectady on November 3rd. The first two meetings were held on Monday evenings at 8:00 P. M., only those enrolled in a certain Extension Course were notified. The attendance was very poor.

The day, place and hour for weekly meetings were then changed. As the majority of the members of the regiment are employed by the General Electric Company, one of the Reserve officers was able to secure the use of one of the company's school rooms from 5:30 to 6:30 P. M. on Fridays. The room is located in a building about a block outside the main gate of the works. All members of the regiment were notified of the new schedule. The response was very gratifying, average attendance for the next two meetings being nearly four times the attendance at the two preceding evening meetings. To the surprise of the Unit Instructor, several business men not employed by the General Electric Company attended and stated that the hour was very convenient to them.

At the least, it appears that attendance at these weekly meetings will, in the city of Schenectady, average not more than about one-third the attendance at monthly meetings, but the number attending is large enough to make the effort well worth while.

However, in view of this condition two entirely different programs of Extension Courses are being run concurrently in the Troop Schools, one program for the weekly meetings and another for the monthly meetings. The great majority of those who attend weekly meetings will attend monthly meetings as well, but this scheme gives more continuity of instruction for the large number who come but once a month. Running two programs concurrently adds considerably to the labor involved in Extension School record keeping but for all its disadvantages this seems to be the best solution.

62nd Coast Artillery (AA)

FOLLOWING the target practice season there is usually a natural letting down and often it is found difficult to make the work during this period interesting and maintain morale at a high standard. As target practice is the culmination of the outdoor period a slackening of the pace in artillery work is desirable. However there are other objectives to be attained.

In this regiment the problem was met in the following manner. The outdoor season really began the first part of April when the regiment left for Aberdeen Proving Ground where it made a training film, participated in a joint antiaircraft-air corps maneuver, conducted demonstration firings and target practice, and gave active training to about ninety Reserve Officers. It returned to its home station the latter part of July.

Due to the absence of the troops from Fort Totten for approximately four months there was a great deal of police work to be done on the post. The barracks and quarters were also in need of repair and painting, which had to be done largely by troop labor, and the regimental transportation, after the hard usage it had received during the summer was in need of a thorough overhauling. In addition to the above the tactical inspection of the regiment by the Corps Area and District Commanders was scheduled for October 3d.

The tactical inspection was made the objective for this period and a training schedule put into effect which called for a half hour close order drill in the morning, three parades a week in the afternoons, and maintenance work in the following priority: transportation, police of post, painting of barracks and quarters. Provision was also made for battalion commanders to conduct tactical training. Saturdays were devoted to the usual inspections. The various maintenance work was carried on simultaneously as far as practical. By October 3d the transportation and the post were in excellent condition and tactical training of the regiment was rated excellent by the Corps Area Commander.

The next period which extended to December 1st when indoor instruction began, was devoted to disciplinary training, training in riot duty, completion of painting of barracks and quarters and the physical training of the individual. The training schedule of this period called for one half hour of close order drill on three mornings per week and one half hour of riot drill on two mornings. The remainder of the mornings was devoted to maintenance. Three afternoons per week were devoted to organized athletics. Each battery organized a team of soccer, indoor baseball (played outside) and volley ball, and each battery played a game on each day scheduled for organized athletics. Battery Commanders were required to see that all men of the batteries participated in these events. On Wednesday afternoons there were voluntary athletics. Friday afternoons were used for preparations for Saturday inspection and Saturday mornings for the usual inspections. Following the organized athletics, regimental parades were held. The training in riot duty culminated in battalion problems

involving the use of the battalions dismounted and a regimental problem in which the regiment operated mounted in trucks.

The men took great interest in the athletic events which were responsible, in no small degree, to acquiring and maintaining a high state of morale. The organized athletics have tended to make the men athletic minded with the result that our post teams are meeting with more success than has been the case for several years.

In spite of the reduced time devoted to maintenance there has been but a slight slowing up in this work.

Coast Artillery Reserve Units of Philadelphia

THE Coast Artillery Reserve, including the 510th and 914th C. A. (AA) and the 603d C. A. (RY), held its first monthly meeting on November 7. Captain Victor Gondos, Jr., of the 510th, who has recently returned from abroad, gave a very interesting resumé of his observations in Czechoslovakia, Austria, Hungary, and Germany. While in Berlin he called on Colonel Edward Carpenter, the Military Attache, a well known Coast Artillery officer and particularly well known to the Reserve in Philadelphia, where he served as Chief of Staff of the 79th Division immediately preceding Colonel Cloke. Many reserve officers will also recall Colonel Carpenter as Commanding Officer at Fort Monroe during the period prior to 1925.

Captain Gondos, in spite of his lack of credentials to investigate the military situation, uncovered facts which have an important bearing on the maintenance of peace in Europe. His statements check with those of all official and unofficial observers and all lead to one answer—*We have not seen the last war.*

The 603d boasts of one Private Gustav F. Reeves, who served on the Italian front as a Captain of Artillery in the Austrian Army during the World War. At the meeting of November 21 he held the interest of those present by relating his personal experiences during the great conflict.

Major F. A. Hause relieved Major Eglin during the summer as the Coast Artillery reserve instructor in Philadelphia. The JOURNAL grape vine correspondent reports that Major Hause is off to a good start. The Coast Artillery Reserve of Philadelphia forms one of the oldest local Coast Artillery Associations. It is chartered as "The Coast Artillery Club of Philadelphia." During the month of November the annual election of officers was held with the following results:

President: Major S. T. Phillips, 510th.

1st Vice President: 1st Lt. Martin D. Meyers, 914th.

2d Vice President: 1st Lt. William Treu, 603d.

Secretary: 1st Lt. H. F. Crawford, 516th.

Treasurer: Major John E. Bullock, 510th.

The enlisted personnel of the office is represented by Staff Sgt. Richard Smith (1st Lt., FA-Res) and Private M. J. Eichmiller, both D. E. M. L., two excellent soldiers well qualified to represent the Regular Army enlisted personnel on Reserve duty.

Harbor Defenses of Sandy Hook

Fort Hancock, N. J.

By COL. J. C. JOHNSON, C.A.C.

The following is a brief resume of activities here:

(a) "Last April the reorganization of the Coast Artillery troops was completed at Fort Hancock. The garrison was completely changed except for a small caretaking detachment for the fixed armament at Forts Hancock and Tilden. The 52d Coast Artillery (Ry), less two battalions came from Fort Eustis, with the railway guns and accessory equipment. The motor column made an excellent march travelling from Fort Eustis to Fort Humphreys the first day, to Aberdeen the second and arriving at Fort Hancock at 3:00 P. M., on the third day. The column consisting of 3 F. W. D's., 4 G. M. C's., 1 light repair truck, 1 reconnaissance and 1 Dodge cars, was limited in speed to that of the slowest vehicle and made the trip without resorting to towing. These facts made the march worthy of special mention and credit is due to Captain A. M. Lawrence who was with 52d C. A., then, for the early preparation, to Lieut. D. J. Bailey, 52d C. A., for conduct and discipline and to the enlisted men responsible for maintenance and operation, for efficiency and careful attention to duty, during the march. The personnel came by troop train under the command of Captain H. H. Slicer, 52d C. A., arriving April 1st. The armament train, Lieut. Glenn Newman, 52d C. A., commanding, arrived early in the morning of April 2d. The latter train travelled at speeds as great as 55 miles per hour at times with no damage to the equipment.

With the arrival of the 52d, a new element was introduced into training here. It involves training of a mobile unit with major caliber guns assigned to harbor defense missions in addition to its other missions. For this purpose a new command post was established but areas and sub-areas usually belonging to batteries of the fixed armament were assigned the new unit as an additional group of the Harbor Defense Command.

Preparation of firing positions which involved certain track construction and considerably more track repair was begun shortly after arrival but was not entirely completed until after the summer period of training of civilian components. This work materially abbreviated the normal training period for our annual artillery firing.

In spite of the short time available for drill, the fall target practices were conducted with an acceptable degree of success. Both practices were very instructive due partly to errors and mistakes made. This statement is made with the idea in mind that few officers have had opportunity actually to handle railway artillery and in this case all were inexperienced except one battery commander. Our experience in these practices accentuates the care required in orientation of base lines and in location of guns and observation posts to meet the precision demanded in firing heavy mobile guns at naval targets.

After target practice, the units entered into training for additional assignment to antiaircraft weapons.

This additional requirement is a difficult one especially in the short fall period of this locality and a solution is being tried out to separate the two types of practices by as great a time space as possible. It is planned to fire the practices of the regularly assigned armament in the fall and the additional assignment in the spring for this year—and thereafter spring and fall respectively.

(b) Minor Joint Army and Navy Communication exercises were held at Fort Hancock on September 8-10th and October 6-8, 1930. The objects of the exercises were to coordinate and practice radio communication between Naval water and land forces and Army air and land forces. These forces were represented by a Navy tug, the 3rd Naval District Station, an airplane of the Ninth Observation Group, the Air Service land station at Mitchell Field and the Coast Artillery land station at Fort Hancock. The exercises were controlled through the last named station. Problems were so drawn for each daily exercise as to involve all stations to the maximum extent. The tug and plane in the initial stages were used for reconnaissance purposes under control of their respective commander, who, upon getting the information of the Red Force, informed Fort Hancock. As the problems progressed and engagement between the hostile fleet and Fort Hancock became eminent, the plane and tug were released to Fort Hancock. The plane was used for observation of fire and the tug for duty in connection with the mine field. Two frequencies were used in the exercises in order to expedite messages and avoid interference. The exercises proved very successful and beneficial as evidenced by the fact that each succeeding problem of each exercise showed considerable improvement over the preceding one, one of the later ones having been characterized by Corps Area authorities as being "a perfect score."

The Harbor Defenses of Southern New York

THE artillery components of the Harbor Defenses of Southern New York at Fort Hamilton and Fort Wadsworth are inactive and on caretaker status. The forts are garrisoned by elements of the 1st Division, with Division Headquarters and Headquarters 18th Infantry and a battalion of that regiment at Fort Hamilton and Headquarters 1st Brigade and the 3d Battalion 16th Infantry at Fort Wadsworth. The 5th Coast Artillery, of which the Headquarters and a reduced Headquarters Battery are active is assigned to the Harbor Defenses and furnishes the personnel for Harbor Defense Headquarters and caretakers for the artillery installation.

The authorized strength of the 5th Coast Artillery is three officers and fifty-six enlisted men, of whom one officer and twenty enlisted men are on detached service with the Harbor Defenses of Eastern New York.

The headquarters of the Harbor Defenses, the Regi-

ment and the Headquarters Battery are at Fort Hamilton. The senior artillery officer, however, is stationed at Fort Wadsworth, where he is in immediate command of the detachment assigned to caretaking at that post. The enlisted personnel is at present divided almost equally between the two posts. The number of non-commissioned staff is sufficient for the work, but the number of enlisted men of the line authorized is hardly sufficient to keep the materiel up to standard, particularly at Fort Wadsworth, where there is about twenty per cent more materiel than at Fort Hamilton. For the last year, however, the Headquarters Battery has been over strength for the greater part of the time and the materiel is in good shape.

Owing to the small size of the caretaking detachments very little training can be undertaken. The principal activity is caretaking and in this, the most difficult part is the work at the emplacements and magazines. In this latitude the guns must be under heavy lubrication from November 15th to about March 15th, which leaves an open season in which conditioning can be done of not more than one hundred and fifty-two working days. During the open season every hour counts. The amount of work done depends entirely on available men and the absence of unavoidable interruptions such as bad weather and inspections. As there is no post power at the batteries or range stations, power and light for artillery work is supplied by the operation of one of the nine 25 K. W. sets at the batteries. The detachment also operates one of the four mine yawls in the Mine Command furnishing transportation between the two forts.

The detachments are quartered in range station dormitories, which have been fixed up very comfortably for them, and which the men prefer to any other quarters available. They have very attractive day rooms and enjoy the privacy which the somewhat detached location gives them. They are attached to one of the infantry companies for mess. The number of men is too small to permit the organization of sport teams, but they combine with other detachments for this purpose and positions on the post teams are open for such aspirants who qualify. The men are contented for the most part and enjoy themselves when off duty. Their chief complaint is that there is little opportunity for advancement or increased pay for ratings. Breaches of discipline are rare and usually trifling.

The stations are very pleasant socially. The dances are well attended, not only by the garrisons themselves, but also by civilian friends and people from the other garrisons in the vicinity. In addition there are bridges, bowling, and dinners. Polo is played at Fort Hamilton during the season. New York City is close by, it requires about an hour to get from Fort Hamilton to Broadway and Forty Second Street and about an hour and a half from Fort Wadsworth to the same place. There are a number of golf clubs within a short distance from Fort Wadsworth. In the Summer, due to the absence of the Infantry at Camp Dix, the posts are rather dull, but, during this season, the Long Island resorts are easy of access from Fort Hamilton and the Jersey shore from Fort Wadsworth.

Harbor Defenses of Pensacola

THE training memorandum for the period September 1st to November 30th called for the following work:

- (1) Complete small arms instructions.
- (2) Complete Infantry instructions.
- (3) Initiate training of Harbor Defense Fire Control Teams and Gun Sections.
- (4) Complete Antiaircraft Service Practice.
- (5) Labor projects.

Completion of small arms instruction, was quickly accomplished. The Band, the only unit of the regiment whose members receive compensation for small arms firing, qualified 100% in pistol firing. The other units of the regiment also made excellent records.

Because of the large number of civilian units that receive training at Fort Barrancas during the summer, infantry drill is an important part of the regular garrison's training. Much stress is placed on this training, particularly among the noncommissioned officers who act as instructors during the summer. Schools, both theoretical and practical, are conducted so that non-commissioned officers may receive instruction in both the execution and teaching of infantry drill. To stimulate interest in the drill a competition between the non-commissioned officers of the batteries was held the last of September. Competition was keen, and the non-commissioned officers of "B" Battery, commanded by Captain K. C. Bonney, won by a very narrow margin. The frequent performance of ceremonies also helps to keep the regiment in a good state of infantry training.

The training of the fire control teams was a more formidable task, particularly for "B" Battery whose primary assignment was recently changed from 3 inch antiaircraft guns to 10 inch sea-coast guns. It necessitated the training of a range section and gun crews to new work and has proceeded very well.

"A" Battery, commanded by Captain J. L. Craig, had an easier task having retained its assignment to seacoast guns on which they were well trained. The only seacoast firing of this season has been sub-caliber firing by both of the firing batteries. Antiaircraft firing took place in October with gratifying results. "A" Battery, firing antiaircraft machine guns to which it had been but recently assigned, made an excellent score, while "B" Battery, firing 3 inch antiaircraft guns, upheld its excellent previous record.

The primary labor projects were the repair of the aprons and parapets of Batteries Sevier and Cullum, and the building of a railroad from Battery Fixed to Battery Langdon, the new 12 inch battery on Fort Pickens. The former task was accomplished by "A" Battery while "B" Battery though severely hampered by the lack of material, has made excellent progress on the railroad project. This railroad which is an extension of one mile to the existing rail system at Fort Pickens makes transportation from the Quartermaster Dock at Pickens to Battery Langdon much easier. Light loads and passengers are transported by gasoline scooter, eliminating the difficult travel through

the sand of Santa Rosa Island. For heavier loads the harbor boats must be used and to make this possible, the wharf near Battery Langdon has recently been rebuilt and a channel dredged. This enabled "A" Battery to move to Battery Langdon the projectiles and powder which could not be placed there before, due to lack of transportation facilities.

Post schools in radio, electricity, gasoline engines, master gunners work and clerical work are being conducted for the enlisted men under the supervision of Captain H. W. Lins.

Communication and night drills have been held regularly, bringing instruction and practice to the telephone operators, members of the command posts, and searchlight operators.

Harbor Defenses of Cristobal

THE main activity of the fall period in the Harbor Defenses of Cristobal has been the training for service target practice. The preparatory work included a diligent study of target practice methods and results for the last few years. These results applied constructively to present conditions enabled marked improvements to be made, both in the way of improved functioning of the materiel and bettered scores. The performance of the 14 in. batteries was particularly noteworthy. In the 1929 practices, the average hits per gun per minute in the harbor defense was 0.15, this year the results show 1.10. The outstanding unit was Battery "H" 2nd Coast Artillery. Captain H. B. Bliss, commanding, which made 10 hits at 16,000 yards range. Close, intelligent and unremitting attention to the preparation of the propelling charges; to essentials in the details of loading; to the training of personnel to eliminate personnel errors, were the important factors in attaining the desired end.

The 14 in. gun units, Battery "E", 1st Coast Artillery, Captain Jeffords and Battery "H", 2nd Coast Artillery, Captain Bliss, came out with a DAPE of 59 yards at about 16,000 yards, or .0037 of the range. This is regarded as a particularly gratifying achievement.

Practices with 12 in. Mortars and 6 in. guns were characterized by unfavorable "breaks"; they were somewhat less successful than the 14 in. practices, although none of the scores are less than "good." It appeared early in the target practice season that rigid adherence to the 1930 regulations would not develop our maximum hitting power. Much interest was aroused by the apparent prohibition on applying adjustment corrections to one gun of a two gun battery to get it into an exact calibrated relation with the other gun. Similarly, reasons were sought for a fixed, inexorable "K" factor; which seemed to call for rapid fire at the start of record practice and continuing at maximum rapidity, whether hits were being made or not. The Battery Commander who "relayed" to apply an adjustment correction—Well, it was just too bad.

The essential characteristic of harbor defense artil-

lery being *fire power*, it would seem that we should begin by getting *hits*. Our gunnery sharks having noted with keen satisfaction the doctrine enunciated in our incomparable manual, Training Regulations 435-280, that "all fire should be delivered with the *greatest accuracy attainable*" they cannot see why all the joy should be taken out of life by the requirements in the target practice regulations, Training Regulations 435-55, for fire by case III and for 2-gun salvos; the prohibition of the so called calibration correction and, what hurt most, the virtual necessity for continued *rapid fire* whether the battery is in adjustment or not.

The mine practice of Battery "E" 2nd Coast Artillery, Captain L. T. Vane, Commanding, and Lieutenant Leif Neprud, in charge of field work, was outstanding. It was a 100% practice. Colonel Fergusson the Harbor Defense Commander, stated that it was one of the best conducted practices he had ever witnessed.

The completion of the heavy gun practices gave the command the short breathing spell now happily provided in Training Regulations 435-55. This was only a brief rest, however. The harbor defense teams having demonstrated their efficiency against the foe who approaches underneath the water and on the surface thereof, he who might contemplate a foray through the air must yet be impressed. The harbor defenses went about this task with their "never-say-die," spirit, with a confidence that when the results of their practices with antiaircraft weapons shall be known, the potential enemy who hopes to vanquish us by air attack will be thoroughly dispirited. The Christmas Holidays after that: in an environment of palms and pilsener: like the Village Blacksmith, "something attempted, something done, has earned a night's repose," the troops will rest for a bit and there are indications that all ranks will attain this last objective with un-failing fortitude.

Harbor Defenses of San Francisco

NOVEMBER was marked by the first visit of our new Chief of Coast Artillery, Major General John W. Gulick, who arrived November 14, and was with us until November 17. He was greeted with an Escort of Honor and conducted to the Parade Ground for a review and inspection of the harbor defense troops.

General Gulick made a complete and detailed inspection of all harbor defense activities with particular emphasis on the batteries and the fire control system. He expressed himself as highly gratified with the results of the inspection.

On Saturday evening, November 15, all Coast Artillery personnel in the Bay region gathered at the Clift Hotel to honor General Gulick with a dinner. A total of one hundred twenty Regular, National Guard, and Reserve Officers were present. Representatives of each of the components pledged their loyalty and support to the new Chief. General Gulick outlined his policies and the general program which he hopes to carry out

during his tenure of office. He left his officers highly optimistic and confident of substantial progress in the future.

On Sunday evening, the officers and ladies of the Harbor Defenses gave General Gulick a supper at the Fort Winfield Scott Officers' Club. The new Commanding General Ninth Corps Area, Major General Malin Craig, was also a guest on this occasion.

Battery A, 6th Coast Artillery, completed its anti-aircraft machine gun practice on November 20th. This is the first practice completed in this Harbor Defense with anti-aircraft materiel as additional assignment. Since it is a "preliminary" practice, no formal report is rendered. It is interesting to note, however, that in the three courses simulating a record practice the organization got 6.1 percent hits, 7.0 percent hits, and 9.5 percent hits, which is considered a commendable performance in view of the inexperience of the gunners.

Harbor Defenses of San Diego

THE Harbor Defenses of San Diego, California, are located at Fort Rosecrans on Point Loma about six miles from the business district of San Diego.

At present the armament and auxiliaries—telephone system, searchlights, power plants, and stations—are in the hands of a caretaking detachment consisting of one commissioned officer and twenty-three enlisted men who are members of Battery D, 3d Coast Artillery.

The post of Fort Rosecrans is commanded by a Brigadier General who is also the Commanding Officer of the 6th Infantry Brigade, the staff and Headquarters Detachment of which are quartered here. There are also stationed at Fort Rosecrans: Detachment of the 11th Cavalry, Quartermaster Corps, Ordnance, and Medical Detachments.

The post is a most delightful one, duty is very pleasant and most of us believe that "we are sitting on top of the world." The climate can not be surpassed, if equalled, by that of any other of our Coast Artillery stations. It is because of this fact that the small detachment is able to keep in very satisfactory condition the armament and auxiliaries and its share of post duties, guard and fatigue.

Normally two Coast Artillery Officers are stationed here, one the Harbor Defense Commander and the junior commands Battery D, and is Artillery Engineer, Ordnance Officer, and Mine Property Officer.

Opportunity is afforded the Coast Artillery officers to learn the problems of other branches thru the medium of conferences on tactics and technique of the other arms, and, which is equally important, to give those of the other arms an insight into the activities and problems of the Coast Artillery.

The 64th Coast Artillery (AA) Fort Shafter

THE 64th Coast Artillery (AA) has been active for the past two months with anti-aircraft machine gun work. Beginning September 20th, individ-

ual instruction and qualification in machine gun firing was started. On November 3d, the provisional machine gun battery was formed. This battery will complete firing during the first week in December.

The Fort Shafter Stadium, which was built by the men of the 64th Coast Artillery under the direction of Colonel Granville Sevier, CAC, was almost totally destroyed in the flood which swept thru the post on November 18th. The Coast Artillerymen were forced to sit by and watch the results of several months of strenuous work washed away in a few hours. However, the entire regiment under Colonel R. H. Williams, CAC, the new regimental commander, turned out bright and early the next morning, and started in to repair the flood's ravages. Several weeks work is ahead of the anti-aircraft boys, but the Fort Shafter stadium will be rebuilt, bigger and better.

Considerable inconvenience was caused by the November 18th flood. The post was without water, light, and gas for many hours. The light and gas were restored the next day, but the water mains were broken, and complete water service was not restored until three days later. During this time, fire engines pumped water to Shafter thru fire hose. The Post Exchange vegetable gardens were swept away in the flood.

Fort Shafter won the Honolulu Sector Volleyball championship this year. The Shafter team, consisting almost entirely of men from the 64th Coast Artillery, went thru the season without a defeat, rolling up eleven victories. Other Coast Artillery posts in the league were Forts Kamehameha, Ruger, and DeRussy.

The most thrilling incident among the personnel of the 64th Coast Artillery (AA) during November was the rescue of Colonel James P. Barney, 8th Field Artillery, and his party, on Tuesday, November 18th.

Colonel Barney, with his sister and chauffeur, was returning to Schofield Barracks when he was caught in the flood following a cloudburst on Tuesday afternoon. His car was stalled on Moanalua Bridge, near Fort Shafter, swept off the bridge, and down the Moanalua stream, now an angry torrent from the flood waters. The Colonel, his sister, and the driver of the car managed to get out of the car, and into trees located in the midst of the stream. For over three hours, they remained in the trees, constantly menaced by the rising waters, while a large number of soldiers, many of whom were men from the 64th Coast Artillery, tried to get ropes to them to save them. Darkness came on, and searchlights from Battery E were called to furnish light for the rescue work. Driving over almost impassable roads, and at great danger, the searchlights managed to get to the vicinity of the imperilled party, and flash lights on the scene. Finally at about 7:30 P. M. ropes were gotten to the party and all were rescued. They were taken to Tripler General Hospital, together with four soldiers who were overcome during the rescue. None were seriously injured.

Coast Artillery Reserve Units of Southern California (Los Angeles)

RESERVE affairs flourish in the balmy climate of Southern California. Colonel Peace states that two instructional meetings per month are held and that the officers of the various regiments are conscientious in attending these meetings. All that the regimental commanders have to do to stage a meeting is to notify the Adjutant and the machine clicks. This is as it should be. At this point it seems appropriate to mention an article entitled "The Reserve Component" by Lieut. Col. E. A. Evans, commanding the 977th C. A., one of the Los Angeles regiments. This article has been the subject of much favorable comment. It is hoped that other reserve regimental commanders will write their ideas upon reserve training for the JOURNAL so that this important subject will receive a thorough airing.

The Coast Artillery Reserve of Southern California is active in other lines. Not long ago another senior officer in that section, annoyed with the prevailing ignorance of the general public on the Coast Artillery as an arm of the service, decided to write an informative article for the Sunday magazine section of one of the local papers. His article was accepted promptly and given a full page spread. The JOURNAL contributed its modest share by furnishing some appropriate photographs. Reserve officers everywhere can assist in fostering intelligent appreciation of the Coast Artillery and should do so. This is not propaganda, but education. The JOURNAL will assist in furnishing data and photographs whenever requested.

At the close of the active duty season the 605th, 608th, and 626th regiments of the Coast Artillery reserve, appreciative of the many courtesies extended them during the summer by the Regular Army officers of Fort MacArthur, gave a dinner dance in their honor at the Pacific Coast Club at Long Beach. This affair was much enjoyed both by the Reserve officers of Los Angeles and the Regulars of Fort MacArthur. Perhaps, if the battle of Waterloo was won on the cricket field at Rugby, the dance floors of Long Beach might also do their share. Certain it is that the better officers know one another, the better will be the team work and harmony when there is a hard job to do together.

General Gulick was the guest of honor at a dinner given on his recent visit of inspection. At this affair the Army, Navy and Marine Corps joined in welcoming the Chief of Coast Artillery to Los Angeles. General Gulick was very appreciative of the honors shown him and the interest in National Defense which this affair indicated.

It is noted that the 605th Coast Artillery has recently organized a regimental pistol team and has challenged all teams who think they can shoot. Major Baum, the regimental commander, is behind this movement. Fort MacArthur has offered to cooperate by furnishing the range, pistols, and ammunition. Unfortunately there is no allowance of ammunition but it can be purchased by participants at a very reasonable

cost. Pistol shooting inspires much interest among reserve officers. It may be practiced in many localities where the facilities exist. These may be furnished by the Regular Army, the National Guard, or, occasionally, civilian shooting clubs. Although it is believed that the Coast Artillery will never permit the enemy to approach within pistol range it is well to know how to use the pistol to good effect. The interest which is always manifested can become contagious in other lines of activity.

The 975th C. A. (AA) Los Angeles, California

THE 975th C. A. being an Antiaircraft Regiment has been confining its inactive duty training to an intensive study of the methods of Fire Control and Position Finding for Antiaircraft Artillery as outlined in the Army Extension Courses on that subject.

Major K. V. Morin and Captain A. L. Enger, commanding the first and second Battalions respectively, are conducting the instruction.

The regiment meets on the first and third Monday evening of each month, the classes continuing for two hours.

The majority of the officers in the 975th are employed in various engineering departments in or near the city of Los Angeles. Their technical training is exceedingly useful when the examination indicates its author is extremely curious about the movements of the elusive airplane in its native element. A knowledge of Greek would also be a great advantage.

To stimulate enthusiasm the first battalion is conducting a friendly competition between batteries. The scoring is based on attendance, completion of subcourses, athletic activities and the conditions of the battery records.

All officers appear in uniform at the Monday evening classes, this to insure a military atmosphere and to remind us that the President, reposing special trust and confidence in the patriotism, valor, fidelity and abilities of each of us, has appointed us officers in the Army of the United States.

Our regimental commander, Lieut. Colonel F. H. Holden, Advertising Manager for the Southern California Gas Company in civil life, has completed one hundred hours of subcourse work in the last month. This is what might be termed an example, and then some.

Coast Artillery Reserve

Lansing, Michigan

UNIT INSTRUCTOR—MAJOR G. F. HUMBERT, C.A.C.
(D.O.L.)

Commanding Officer, 947th—CAPTAIN DAN W. MATHER,
612 Jones St., St. Joseph,
Mich.

Commanding Officer, 948th—MAJOR CLARENCE N. WINSTON,
608 Hoyt St., Saginaw, Mich.

These two regiments consist of 130 officers, distributed throughout the State of Michigan, exclusive of

Detroit. With but one or two exceptions all officers are graduates of the Coast Artillery R. O. T. C. Unit at Michigan State College, East Lansing, Michigan.

The indoor instruction period is being devoted to the study of Applied Gunnery, Subcourse 3-a, Battery Officers' Course. Schools are being held in Lansing, Battle Creek, Saginaw, Midland, and Grand Rapids. Sixty-three officers have enrolled for the course. About thirty have now completed Part I.

A Lansing Chapter of the Reserve officers Association was recently organized. 1st Lt. G. E. Thrun, Dent-Res. attached to the 947th CA (AA) has been elected President. 1st Lt. H. H. Eustron, CA-Res. 947th CA (AA) has been elected Secretary. All reserve officers are urged to join the Association.

The Regiments regretted exceedingly to learn of the retirement of Colonel H. C. Barnes, Chief of Staff, Coast Artillery (AA) Group, Sixth Corps Area, Chicago, Illinois. The best wishes of all officers go with him for a long and continued period of usefulness in his retirement.

Promotions during the past several months are as follows:

947th C. A. (AA)

To Captain:

P. P. Pratt, 187 W. Territorial Rd., Battle Creek, Michigan. Capt. Pratt is conducting the Group School in Battle Creek and doing it splendidly.
W. F. Watson, Jr. 168 W. Territorial Rd., Battle Creek, Michigan.

M. E. Newark, 328 N. Hayford Ave., Lansing, Michigan.

To 1st Lieutenant:

C. P. Austin, 336 S. Burdick St., Kalamazoo, Mich.
G. A. Culbert, 312 E. State Rd. Hastings, Mich.
George Honeywell, Route 3, Albion, Mich.
C. R. V. Shelley, 723 W. Kalamazoo, Lansing, Michigan.

948th C. A. (AA)

To Major:

C. N. Winston, 608 Hoyt St., Saginaw, Michigan.

To 1st Lieutenant:

J. G. Lauffer, R. R. 1, Kent City, Mich.

F. L. Reynolds, 306 W. Larkin St., Midland, Mich.

Congratulations are extended all the above for the time, work and interest they have shown in their commissions. Their interest is continuing as all of them are now enrolled either in Extension Course or Group School work.

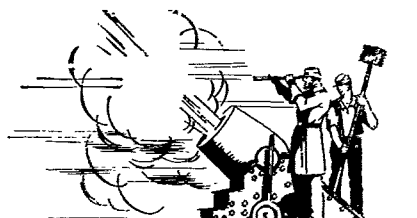
Executive Officer for Reserve Affairs Placed Under Chief of Staff

THE Secretary of War has approved the recommendation of the Chief of Staff that the office of the Executive Officer for Reserve Affairs be transferred from its present location in the Office of the Assistant Secretary to that of the Chief of Staff.

The office of the Executive for Reserve Affairs was originally established as a recognition of the importance of the Officers' Reserve Corps and of the Organized Reserves. While these organizations, like the Regular Army, are handled by the War Department as a whole, it has proven desirable to have an office in the War Department especially charged with Reserve affairs. It was not intended when this office was established, and is not now intended, to transfer to it any of the functions of the existing agencies of the War Department but to create an office whose special function is to facilitate the business of Reserve officers and the Organized Reserves in the War Department and to provide liaison with them in the field. In charge of Reserve Affairs is Colonel C. D. Herron, Field Artillery who succeeded Colonel D. L. Stone, 3rd Infantry, upon the expiration of his tour of duty in the War Department.

Important to Some Reserve Officers

WHEN a former reserve officer, not reappointed because of absence in a foreign country, returns to the limits of the United States or its possessions and applies therefor, he will be considered for appointment in the grade and section he held at the termination of his last appointment. In such cases neither professional examination nor vacancy will be required and suspension of appointments in the particular grade and section will not apply. Appointments under this policy will be made with eligibility for promotion, assignment and active duty only when the former reserve officer, had he been reappointed at the termination of his last appointment, would have been eligible for those privileges by reason of having qualified as indicated in paragraph 15a or paragraph 15b, A. R. 140-5; otherwise the appointment will be without those privileges.



COAST ARTILLERY BOARD NOTES

Communications relating to the development or improvement in the methods or materiel for the Coast Artillery will be welcome from any members of the Corps or of the Service at Large. These communications, with model or drawings of devices proposed, may be sent direct to the Coast Artillery Board, Fort Monroe, Virginia, and will receive careful consideration. J. C. Ohnstad, Lieutenant Colonel, C. A. C., President.

Projects Completed During November

No.	Title
804	Test of Trailers (HMORS) for Fire Control Equipment of Tractor Drawn Artillery
810	Service Practice. .50 Cal. Machine Gun—Annual Ammunition Allowance
811	Sighting Equipment for Railway Artillery
812	Application of the Seismograph to Military Purposes
813	Proposed Changes in Sperry 60-inch Antiaircraft Searchlight Unit. Drum Type (Duplex Unit)

Projects Under Consideration

No.	Title
679	Test of Rear Band Assembly for Dummy Projectiles
681	Test of Fast Towing Target
689	Special Seacoast Target Practice for Training of Aerial Observers
694	Test of Erosion Charts
701	Comments on Target Practice Reports
707	Comments on Target Practice Reports
727	Standard Single Conductor Mine System
764	Reminder List for Antiaircraft Artillery Target Practice
796	Test of Elevating Mechanism (T4) for 12" Ry. Mortar Carriage
800	Test of Radio Direction Finders
801	Portable Terminal Center. Telephone Lines of Mobile Artillery
806	Use of Glider Targets and Aircraft for Targets instead of Towed Targets for Antiaircraft Artillery
808	Antiaircraft Communications
809	Sight Mounting for Antiaircraft Gun, M1918

Action Taken

Completed Nov. 12. Recommend that, whenever available, trailers (HMORS) be issued to tractor drawn units of the C. A.; that no attempt be made at present to modify the Trailer (HMORS) for use

with tractor drawn artillery or to develop a new type of vehicle for this purpose.

Completed Nov. 10. Recommend certain changes in the allowances for machine gun ammunition (Caliber .30 and .50), and number of practices.

Completed Nov. 17. Recommend that the M1923 telescopic sight be the standard for issue for the 14" gun railway mount, M1920, and also for any all round fire railway mounts manufactured in the future; that no steps be taken to provide limited standard armament with direct fire sights; that sights for seacoast firing be graduated in degrees, preferably, and have movable indices.

Completed Nov. 15. Recommend that no steps be taken for development of the seismograph as a means of intelligence service for Coast Artillery.

Completed Nov. 24. Recommend consideration of device similar to bell system used on aviation field floodlight, manufactured by Sperry Gyroscope Company, for attachment to the Sperry High Intensity Lamp for the purpose of determining when positive carbon projects less than 7/8" from the head.

Action Taken

REOPENED. (Old title of this project; "Dummy Projectile, 12" Gun, Ramming Test of"). Under test.

Test by Navy Department Completed. Awaiting test by Army boat.

Awaiting reports of practices.

Awaiting further tests.

Comments are submitted as reports are received.

Awaiting receipt of report of tests conducted by 92d C. A.

A continuing project

Under study

Awaiting report of test by local Organization.

Under study

Under study—awaiting report from testing organizations.

Under study

Under study

Under study

PROFESSIONAL NOTES

British Opinion on Air Force Activities

EDITOR'S NOTE: The following is quoted from an article by Sir Herbert Russell appeared in the Naval and Military Record (British). It is the aim of the Coast Artillery Journal to present for the information of its readers the opinion of outstanding foreign officers on pertinent subjects. The opinion of Sir Herbert Russell is more or less unfavorable to air forces. This is published without prejudice and submitted for your consideration. It is noted in articles appearing in British periodicals that recently there has been a definite trend towards the continued importance of ground and naval forces and less inclination to consider air forces omnipotent. In a nation in such close contact with other nations who may become enemies this trend may be significant. The publication of this article is not an attempt to influence opinion but is believed to add to the general information available in the appraisal of air forces.

“THE Royal Air Force came in for a good deal of newspaper criticism over its alleged failure in connection with the Afridi raids against Peshawar. It was pointed out that an expenditure of 6,000 bombs appeared to have had little if any restraining effect upon the predatory tribesmen. This of course, is pure bunk. It had the effect of driving the big lashkar to ravines and caves and giving the military garrison time to make preparation for anything that might come. Having driven the Afridi concentration to cover, our airmen might have proceeded to drench the ground with phosgene gas and asphyxiated the lot. But we do not want any ‘frightfulness’ which can be possibly avoided. When however, the R. A. F. is blamed for what they did not do, I think it ought to be realized what they might have done had there been any necessity—in which case we should have had a tremendous outcry that they had done far too much!

“I believe I am right in saying that, in a general way, the Royal Navy does not ‘go much’ upon the possibilities of aerial warfare with reference to its own service. It is fully alive to the potentialities of air reconnaissance. It is not very much alive to the manœuvres of bombs and air torpedoes. On the whole it thinks—and I am disposed to think with it—that shells from guns are likely to prove much more deadly than bombs from aeroplanes, and that deliberately-aimed torpedoes from submarines or destroyers are more dangerous than flash shots from flying craft. Granted their own conditions, aircraft could do a great deal of mischief against seacraft. But in wartime it is the first business of any fighting force to deny their own conditions to other fighting forces. When a commanding officer knows what he has to provide against (that is to say, what contingent risks manœuvre him), there is no excuse for not providing against them.

“Long before the end of the war the Germans possessed plenty of long-distance bombing machines and abundance of daring and experienced airmen. The Grand Fleet was mainly at Scapa Flow and partly at Rosyth. Both were within easy distance for a great daylight raid. Why was no effort made to strike a blow from the air which, had it succeeded at all, must have inflicted a good deal of damage upon our main sea strength? We had no big intercepting force with

which to try and head off such an attempt; the Germans knew that. Their experience of anti-aircraft fire over the Western Front would have scarcely caused them to find an effectual deterrent in the combined anti-aircraft armament of the Grand Fleet. Even admitting that such an air raid would have represented a big risk, the issue at stake surely justified any risk. The destruction of one battleship would have been worth more to the Germans than all the devastation they could hope to inflict upon London. Consider the moral effect of such a visitation; the conclusion that Scapa and Rosyth were no longer safe for our Fleet.

“In the early days of the war, Winston Churchill drew a lurid picture of our swarms of ‘hornets of the air’ giving a deuce of a time to the High Seas Fleet in the Jade—whence we should ‘dig it out’ if it would not come out. It all sounded so perfectly feasible that we found it easy to cheer with enthusiasm and conviction. There was not the same incentive for us to try and destroy the High Seas Fleet as there was for the Germans to try and cripple the Grand Fleet. It is not difficult to realize why we never made any such attempt upon Wilhelmshaven. In the early part of the war we had not got the ‘hornets of the air’ for such an adventure. By the time we had got them the long series of futile raids over Zeebrugge, which did not even inconvenience the U-boats operating from that place, had made it clear that destruction from the air was by no means such an easy business as it looked.

“One can only conclude that the reason no German aerial armada ever crossed the North Sea to attack our naval concentrations was because the methodical Teutonic mind decided that, ‘the game would not be worth the candle.’ If there is any other explanation it would be interesting to learn what it is. To say that all available machines were imperatively needed for other purposes is quite insufficient excuse. No other purpose could have been more imperative than to inflict damage and demoralization upon the Grand Fleet. All other raids over England were merely childish in comparison with such a major military objective.

“We are assured that the means and methods of air warfare have developed to an extraordinary degree since the Great War, and that if we had to enter a similar struggle today, history would take quite another turn so far as the influence of the air arm is concerned. Not being a technical specialist in matters of aerial warfare I can only bring to this statement the demerit of common intelligence. We have faster and more powerful machines than we had in 1918. We have more potent high explosives and still more deadly gas. But how do these details of mechanical progress affect the principles of air warfare? Within the limited naval zone of the Great War, what the aeroplane could

do today she could have done in 1916-18. She might possibly do it a bit more thoroughly today; this is only a question of degree. It is natural to think of a young service as growing very much more rapidly than an old service which has long since reached maturity. I yield to no man in my admiration for the R. A. F. and am prepared to be rude to anybody who shall question that it is the finest air service in the world. But this is not going to make a young service grow any faster; less still is it going to widen its limitations.

"Whilst we concede a remarkable advance in aviation during the past 12 years, are we to assume that there has been no progress in antiaircraft methods? Is it not rather the fact that advancement on one hand has been so far balanced by progress on the other that, relatively, things are much as they were during the Great War?

"I am perhaps inevitably, taking a wider view than is compassed by consideration of the purely naval aspects of air warfare. We are all agreed, I take it, as to the high value of the observer aircraft. It is the fighting aircraft which is difficult to appraise, whether as a weapon of attack or as an attacker. Attempts have been made to represent her as a serious rival to the warship and to suggest that, in the Persian Gulf Patrol, for instance, she might replace the warship. However the flying boat may develop, I confess my inability to see how she can ever be more than an adjunct to the surface ship. Her bombs and her machine guns might be very effective in incipient 'little affairs' which prompt action might prevent from blossoming into full-blown 'little affairs.' She can watch a wide radius and tell a warship just where to go. But this is coming to observer duties. The popular idea that the fleet action of the future will start with a clash in the air is good stuff for fiction writers, but rather lost upon the naval fancy. Aircraft of both sides will be fully occupied in observing and spotting from the moment the opposing fleets establish contact. No doubt they will do their best mutually to deny observing and spotting, but if they are going to essay this by a regular fight in the blue, both will be neglecting the primary duties for which they are needed. My own opinion is that the aircraft carrier and her flock will best serve their purpose by keeping away from the fighting ships and merely watching them and maintaining a full service of intelligence to their respective commanders. They might, indeed, butt-in over 'lame ducks' but the supposition that the aerial squadrons will lead off the great sea battle by launching a bombing attack as a prearranged feature of future action tactics may, I think be left to the film producers.

"We come to the question of the employment of aircraft in chemical warfare at sea. If they can rain poison gas upon the waters athwart the path of warships they will open a possibility which challenges serious consideration. German destroyers did try something of the sort in the course of a running action with our destroyers, and a good many of our men were temporarily incapacitated. But this appears to be a game which could be played by the ships without

the employment of aircraft. To effectively gas a speeding ship on the breezy ocean is no simple matter. Her people in the fighting stations are already in respirators, to protect them from cordite fumes. No ship follows dead in the wake of an enemy for fear of mine-dropping, and, by the same token, no ship need accommodate a gas-dropping aeroplane, which might just as easily smother one of her own ships as ours.

"It must remain very conjectural until put to the test of practical reality, which, let us trust, may not be in our time. The air arm did not get much opportunity of acting with the Fleet during the Great War. Some time ago I wrote in these columns that those of us who share in the view held in the Navy as to the very small influence which air fighters may have, may be mistaken. The real text upon which I now return to the subject is the alleged failure of our airmen during the Afridi raids against Peshawar, a failure which is too much taken for granted since we really cannot see what might have happened had the airmen not been there at all. Still, it does seem pretty clear that 6,000 bombs produced very trifling material damage, whatever moral effect this may have had. There can be no question that this demonstration on the Northwest Frontier has stiffened the Navy in its view that the aircraft is not going to prove a very serious rival to the seacraft. If the truth were told, I doubt whether there is any serious idea amongst the people who have the ordering of these things of attempting to employ her in this direction. The Fleet air arm can do very useful work within its limitations. Aircraft may fight one another, but to try and fight ships, which are well able to take their own part, is never likely to prove profitable. The air enthusiast probably thinks otherwise, but experience of war teaches that as a rule the enthusiast is a very hazardous mentor."

New Uniforms for R. O. T. C. Units

THE difficulty of properly equipping R. O. T. C. units with suitable uniforms has been considerably lessened this year by the issue of the new type roll collar uniforms made by the Quartermaster Depot at Philadelphia. Until this year the basic course students were issued left over uniforms from the World War which caused unfavorable comment on account of the old type standing collar, rough material and poor fit.

In some R. O. T. C. units the advanced course students (usually juniors and seniors) draw commutation money which they use for uniforms instead of drawing uniforms from the Government. Some R. O. T. C. units have gray uniforms, and others like Virginia Military Institute have their own types. The advanced course students have more costly uniforms than the basic course students, who are usually freshmen and sophomores, the former wearing Sam Browne belts, boots and other equipment similar to officers. The advanced course students, however, are given an additional allowance for the purchase of their uniforms.

YOU TELL EM

Rambling Aboard—And Very Well Done

The Editor, THE COAST ARTILLERY JOURNAL.

Ye Editor:

Wherein We Assume a Diplomatic Posture.

Your self-appointed, unofficial military attaché-at-large to the continent of Europe hereby wishes to tender you, sir, his unofficial, undigested and uncensored report.

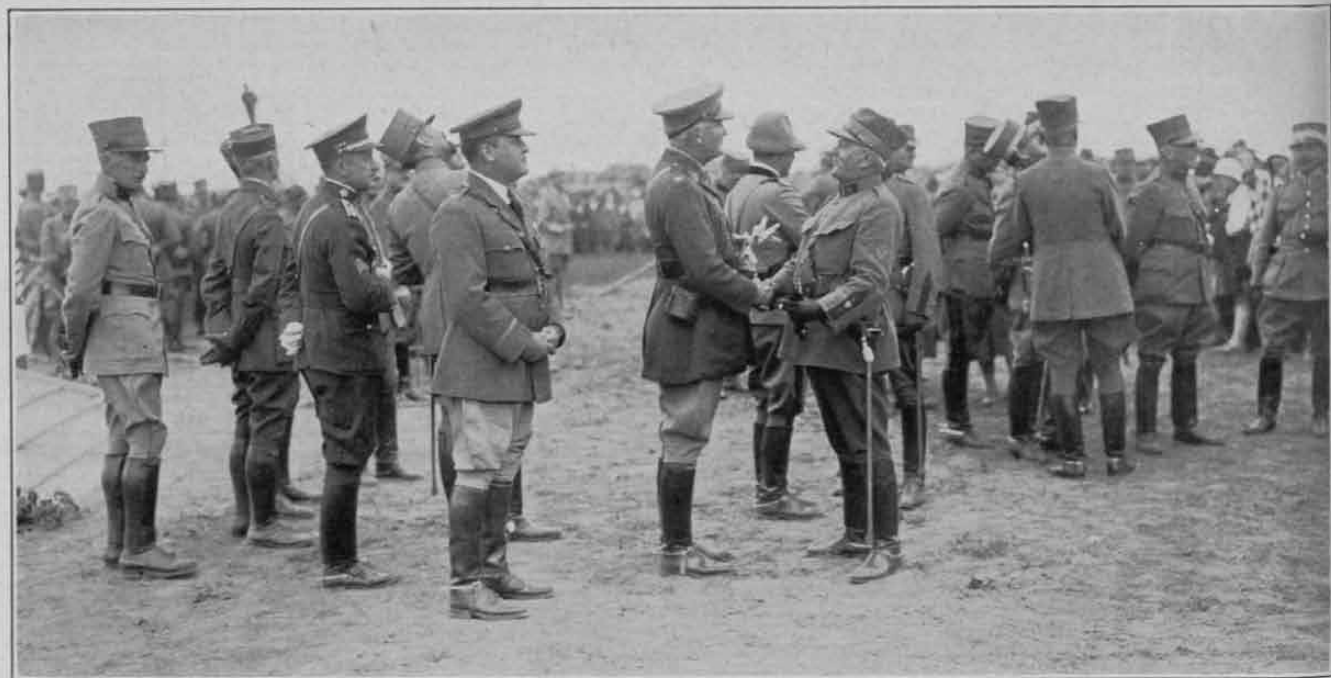
To begin with, you will appreciate, sir, that during a large share of the time, I was compelled to travel incognito in order to facilitate the gathering of undiluted intelligence. However, at important points I lapsed into my unofficial capacity. Thus, while in Berlin, I had the honor of calling on Colonel Carpenter whose shingle bears the legend, "Military Attaché, Embassy of the United States of America." My esteemed and honored colleague received me with great warmth and every courtesy although, unfortunately, not having been previously apprised of the intended visit, the usual guard of honor (consisting of the maitre d'hotel, concierge and bellhops) was sadly missing. However, let that pass.

During our subsequently delightful conversation on matters of state the Colonel was informed of my dubious status as free lance correspondent for the COAST ARTILLERY JOURNAL, and that in that capacity any information he could impart as to artillery progress in Germany, particularly of the antiaircraft, would be gladly received for the columns of the

JOURNAL. The Colonel, however, stated that very little along these lines is attempted in the German Army as the Treaty of Versailles fetters them in all fields pertaining to aircraft, tanks and mechanization, generally. But even though action may be interdicted, it has ever been another story to control thought. So, unquestionably, the Germans are not sleeping over their drafting boards.

Now, although your correspondents gallant efforts to elicit more explicit information came to naught, yet Colonel Carpenter was very happy to recall some of the old times and old comrades at Fort Monroe and other places. The Colonel, it appears, had quite a number of recollections of Philadelphia, having served as Chief of Staff of the 79th Division shortly after the war.

But before leaving our friends, the Germans, attention should be called to two highly significant yet contradictory items about air defense. The German General von Deimling has been quoted in continental papers as having become a sudden convert to peace-at-any-price since he has witnessed the air defense maneuvers of the British, French and Italian armies. Von Deimling is quoted as saying that the experimental results obtained by these three armies proves the utter inadequacy of all defense measures against attacking aircraft. The antiaircraft guns have proved worthless and the defending air forces too slow in combatting heavy attacks against cities and industrial



Col. Carpenter, C. A. C., and Major Reinberg, A. C., at the Swiss Maneuvers

areas. In other words, the old axiom that new modes of offense breed equally powerful modes of defense seems not to be operative in this instance. It would be interesting to know what the matured conclusions of the British are about their recent war games over London.

Against all this we have news items published during the operations of the Afridi tribesmen against Peshawar, in which it was clearly stated that the in-



The German Artillery is Armed with the Old Type Material

cessant bombing attacks of the British air formations had completely failed of their purpose of stopping the Afridi march upon that city. As a last resort the British were forced to bring into play their ground artillery and infantry forces. The thought presents itself: how much worse would it have been for the British if the Afrida had possessed antiaircraft?

So while our German playmates are forbidden to play with data computers and height finders, nevertheless the Devil himself couldn't prevent them from raising soldiers. At first I thought they had declared martial law in Berlin, for the uniformed persons directing traffic along the thorough-fares looked and acted like units of the Prussian Guards. A troop of cavalry came trotting up the Unter den Linden, in faultless formation sitting their mounts like Uhlaus of old. I asked questions: "Why all this military display?" "Oh, they are only policemen," was the reply. Well, if they were really "cops." New York's "finest" should turn green with envy. However, as attaché-at-large I have my suspicions—there seemed to be entirely too many policemen in Germany. One had to recall, with some humor, Napoleon's attempt, after Jena, to restrict the Prussian army. No one has ever accused Napoleon of lacking an excellent secret service—yet he had certain awakenings at Leipzig and along the Katzbach, and became entirely disabused at Ligny and Belle Alliance. The Germans are willing to forget Alsace-Lorraine, but the Danzig corridor is still a moot question containing more dynamite than vaseline.

II

The Berlin-Budapest express was thundering through Czecho-Slovakia. The scenery had sped past to dinner time. Forsooth, to satisfy the inner man I was standing in the diner looking for a seat. Only one table with two places was unoccupied. A Czech army officer and I were simultaneously seated at this table. We

bowed, looked at each other, then silence. Finally noticing a red patch on the collar of the officer's blouse I concluded he must be an artilleryman since European armies customarily use that color for that branch of the service. Therefore your attaché-at-large made bold to address said Czech in execrable German, and advise the officer that his table companion was also interested in artillery. This proved to be an excellent opening and we became quite friendly.

Our military friend proved to be a first lieutenant of mountain artillery, and a rather pleasant and unassuming fellow. We conversed more or less, for the remainder of the day. It developed that the Czechs have done nothing by way of new artillery developments, and my friend was quite surprised to hear of the many new instruments, guns and principles developed in our antiaircraft work. Not so long ago an article appeared in the JOURNAL saying that the Czech Army was or is being mechanized. According to my informant this is as yet mostly in the realm of dreams, and that at present their equipment and transport still largely depend on the good will of our animal friends.

The artilleryman was travelling to rejoin his garrison in Komorn, which is a considerable town on the Hungarian border. This led me to ask whether there were large concentrations of their troops along that border, as the newspapers had stated some time back. He replied in the negative, stating they now kept but few men along the line of the Danube. Maybe that's true but one may feel sure that the Hungarians feel a *bit* differently about that border. So now, having arrived at the land of the Magyars, let us look at them a bit.

III

The change is startling, in the point of atmosphere. It is possible that the rest of Europe is in a peaceful frame of mind but Hungary is at war:



The Germans Seem to Think Well of These Collapsible Boats

Military discipline is rigid and is seen in the bearing of every official. As our train passes through the stations along the way, the entire station force stands on the platform at rigid attention until the train has gone by. When arriving in Budapest we find the police on duty at the terminal, wearing military decorations on their chests, with sabers and pistols for side arms. If perchance, one approaches them, they instantly salute with beautiful precision born of long

practice. At the former royal palace and other government buildings, we witness the regular soldiery all smartly attired in olive drab uniforms, plus the German style trench helmet. And speaking of soldierly bearing—these boys have it to an extent that even the Germans become less stiff in comparison. A glance at these fellows and one can understand why it is that despite the Treaty of Trianon limiting their numbers to 35,000 without airplanes, tanks or heavy artillery, an uncomfortable feeling steals over the Rumanians, the Czecho-Slovaks, the Serbs, and other kindred folk of the ring of steel around Hungary, known to the world as the "Little Entente."

Again your attaché-at-large is as dubious about the manner of keeping the military restrictions of the Treaty of Trianon as he was about that of Versailles.

I travelled to the northeastern border of Hungary in answer to a friendly invitation from those regions and found an excessive number of barracks—and new barracks at that—in small towns near the border. Soldiers were oozing from them. And yet more barracks were under construction. Police stations in the towns were built as if to house division or corps headquarters. When asking questions as to the meaning of all this, one was met with broad winks. I thought I could observe, beyond all, a terrific desire, a burning urge to *fight*. A strange and wondrous spectacle, indeed.

Here is a people of eight million souls (twenty millions before 1914) whom the world war smashed the worst of any people in that conflict. Being the most spirited fighting element in the Austro-Hungarian Army they died by the hundred thousands, on all fronts. The peace tore their country to shreds by taking away two-thirds of land and population and apportioning them amongst the succession states such as Czecho-Slovakia, Yugo-Slavia, Rumania, and even Austria. Of all European peoples the Hungarians really should feel crushed. They do. They have nothing left but their beautiful capital city and a handful of the rich, alluvial Danubian plains. Forests, mines, seaports, factories—all gone. But this people through the centuries have been noted for one never-failing characteristic—they could and would fight. So it comes to pass that while we in America talk peace, while England wants peace, while even the Germans and French seem somewhat disposed to patch it up, and even in Italy Mussolini looks more bellicose than he really desires to be—the Magyar people in the extremity of their desperation at the results of the last peace can remember, can talk, eat and sleep only one thing—war.

After the horrors of the World War and the still greater horrors of the revolution, one cannot but stand stupefied at the sight of perhaps the only people in the world who not only still have stomach for further fight, but who demand it. For over a thousand years they have fought to maintain the lands of the crown of St. Stephen and they will do so again, and only the steady hands of strong statesmen keeps them quiet long enough to bide the proper moment.

IV

If anyone in America is laboring under the false belief that the Wilsonian fourteen points, the League of Nations, the "Locarno Spirit," the Kellogg Pact, and other sundry devices have assured us peace, kindly let them be disabused.

With the great city of Budapest as the dynamic center, invisible waves of war are spreading out for thousands of square miles, and a central and south-eastern European conflagration is discernible. If this once breaks out, it may easily spread to Russia, since the Soviets have never recognized Rumania's annexation of the Ukrainian province of Bessarabia. And once Russia is in, how will they keep the Russians and the Germans from snuffing out the Polish corridor and putting an end to Latvia and Esthonia? How then will Britain and France keep out of it? How will Italy be kept from pouncing on the Yugo-Slavs at the same time with Hungary, in order to enforce their claims on the Dalmatian coast? And when all this happens—and the development is entirely logical, be-



Comrade Kosk, the First Military Attache to Germany

cause these exposed powder magazines were left by the last "peace"—where will America head in? We shall have no direct interest, other than trade and finance, yet we had no other interest in the last conflict. Could we keep out of it? God grant we could, yet the last time considerations of national honor forced us in. But let us be a bit less surprised and a bit better prepared than we were in 1914. Let us frankly see the unpleasant truth—central and south-eastern Europe are sitting on top of a powder magazine which is by way of blowing up, all in its own good time—even as at Serajevo.

With this your attaché-at-large begs to sign off and cease broadcasting for the time being.

With warmest regards.

Sincerely,

VICTOR GONDOS, JR.,

Capt., C. A.-Res.

COAST ARTILLERY ORDERS

Col. Frank C. Jewell, from 4th C. A. D., Ft. MePherson, to Walter Reed Hosp., Wash. D. C.

Col. James L. Long, Letterman Gen. Hosp., Presidio of San Francisco, will appear before the Army retiring board for examination.

Col. Allen D. Raymond, retired because of disability, Dec. 31.

Lt. Col. Matthew A. Cross, sailing from New York Jan. 8, instead of Dec. 17.

Lt. Col. Charles H. Patterson, from 52nd, Ft. Hancock, to office Chief of Staff, Wash. D. C.

Lt. Col. Frederic H. Smith from duty as Adjutant General, Dist. of Columbia, N. G. to Fort Monroe for refresher course thence to 69th, Ft. McClellan.

Lt. Col. Will P. Watson, to active duty, Oct. 15. He will proceed from Hamilton, Ohio, to Aberdeen, Md.

Major George D. Davidson, from Hawaii to 6th, Ft. Winfield Scott, Calif.

Major Cyril A. W. Dawson, from instructor, Ore. Natl. Guard, Salem, to Ft. Mason, Calif., Dec. 30, for duty on transport.

Major Howard K. Loughry promoted Lt. Col. Nov. 1.

Major Richard B. Webb, from student, Command and General Staff School, Ft. Leavenworth, to Org. Res., Denver, Col., as unit instructor.

Capt. Raymond B. Bottom, resignation of his commission as an officer of the army is accepted by the President.

Capt. Edwin C. Callicut, Letterman General Hospital, Presidio of San Francisco, will appear before the Army retiring board for examination.

Capt. Norman E. Hartman, from Coast Artillery School, Fort Monroe, to student, University of Mich., Feb. 16.

Capt. Frank A. Hollingshead, from student, Coast Artillery School, Ft. Monroe, to Panama, sailing New York, March 26.

Capt. John T. Lewis, from duty as instructor Coast Artillery School, Ft. Monroe, to Coast Artillery Board, Ft. Monroe, Dec. 1.

Capt. Albert Mossman, to Hawaii sailing New York, April 3, instead of Feb. 17.

Capt. Harry E. Pendleton, from student, Coast Artillery School, Ft. Monroe, to 51st, Ft. Monroe.

Capt. Joseph F. Stiley, from the Philippines to 12th, Ft. Monroe.

Capt. W. H. Sweet, from 6th, Ft. Winfield Scott, to Org. Res., Duluth, Minn.

Capt. Philip D. Terry, resignation as an officer of the army, to take effect Jan 10, is accepted by the President.

1st Lt. Edward Barber, from student, Coast Artillery School, Ft. Monroe, to Panama, sailing New York, Feb. 19.

1st Lt. Alan F. Cameron, from 6th, Ft. Winfield Scott, to the Philippines, sailing San Francisco, May 27.

1st Lt. Edward A. Dolph, 62d, Ft. Totten, to the Philippines sailing New York, Jan. 13.

1st Lt. Howard O. Douglas, from the Philippines to 51st, Ft. Monroe.

1st Lt. John W. Dwyer, from 52d, Ft. Monroe, to Hawaii, sailing New York, Feb. 20.

1st Lt. Dean S. Ellerthorpe, 61st, Ft. Sheridan, to West Point, N. Y.

1st Lt. George A. Ford, from the Philippines to 52d, Ft. Monroe.

1st Lt. David B. Latimer, student, Coast Artillery School, Ft. Monroe to 12th, Ft. Monroe.

1st Lt. Donald McLean, from 61st, Ft. Sheridan to the Philippines sailing New York, May 5.

1st Lt. Clarence M. Mendenhall, Jr., sailing New York, Jan. 13, instead of Dec. 5.

1st Lt. Lew M. Morton, from Philippines to 12th, Ft. Monroe.

1st Lt. Joe D. Moss, from student, Coast Artillery School, Ft. Monroe, to report to Brig. Gen. Stanley D. Embick, U. S. A., for duty as aide.

1st Lt. Guy H. Stubbs, from 62d, Ft. Totten to the Philippines sailing New York, May 5.

1st Lt. Everett C. Wallace, from student, Coast Artillery School, Ft. Monroe, to 61st, Ft. Sheridan.

1st Lt. Fred B. Waters, from 6th, Ft. Winfield Scott, to Hawaii, sailing San Francisco, March 10.

1st Lt. Walter J. Wolfe, Ft. Totten, to 11th, Ft. H. G. Wright.

2d Lt. Kenneth M. Briggs from the Philippines to 6th, Ft. Winfield Scott.

2d Lt. C. G. Calloway, from 62d, Ft. Totten, to Hawaii, sailing New York, March 18.

2d Lt. Clifton C. Carter, from Hawaii, to 62d, Ft. Totten.

2d Lt. Charles C. Cloud, Jr., from Air Corps, March Field, Calif., to 63rd, Ft. MacArthur Calif.

2d Lt. James T. Darrah, from 61st, Ft. Sheridan to the Philippines, sailing New York, May 5.

2d Lt. Everett C. Dunham, from the Philippines to Ft. McClellan, Ala.

2d Lt. Burgo D. Gill, from Panama to 62d, Ft. Totten.

2d Lt. John S. Henn promoted to 1st Lt. Nov. 19, 1930.

2d Lt. Henry J. Hoeffler, from Philippines to 13th, Ft. Barrancas.

2d Lt. John R. Lovell, to 12th, Ft. Monroe, instead of to 14th, Ft. Worden.

2d Lt. John E. Mortimer, from Hawaii, to 13th, Ft. Barrancas.

2d Lt. Willis A. Perry, from Air Corps, Ft. Sam Houston, to Hawaii, sailing San Francisco, March 10.

2d Lt. Arthur C. Peterson, from Air Corps, Ft. Sam Houston, to 62d. Ft. Totten.

2d Lt. Cyrus L. Peterson from 63d. Ft. MacArthur, to the Philippines sailing San Francisco, Feb. 4.

2d Lt. H. E. Strickland promoted to 1st Lt. Dec. 1.

Sgt. Stephen T. Knowles, Bat. B, 61st, retired, Ft. Sheridan, Dec. 31.

Mast. Sgt. Frank J. Forbing, 7th, retired, Ft. Worden, Nov. 30.

Mast. Sgt. Joel W. Rowan, Bat. E. 3d, retired, Ft. Stevens, Nov. 30.

1st Sgt. James Chadwick, Bat. B, 41st, retired, Ft. Kamehameha, Nov. 30.

1st Sgt. William H. Green, Bat. F, 62d, retired, Ft. Totten, Dec. 31.

1st Sgt. Price Hounshell, Bat. A, 12th, retired, Nov. 30.

1st Sgt. John E. O'Neill, Bat. I, 64th, retired, Ft. Shafter, Nov. 30.

1st Sgt. Samuel T. Sullivan, Bat. G, 14th, retired, Ft. Worden, Nov. 30.

Sound Advice

A Manual for Use in the Philippines

HARRIOTTE MONTAGUE

The transport siren signals "Guests depart!"

Quick handshakes; some few tears.

"Goodbye."

"Good luck."

"We'll see you in two years."

A sea-gull escort skyward soared and whirled.

The Golden Gate—pass to an ocean world!

Cloud-hung Hawaii.

Guam's green reef astern.

It's time to take our notebooks out and learn

About the Philippines, our future station;

Advice supplied by first-hand information.

Writes A: "Take every bloomin' thing you've got.

You'll need it all, you'll entertain a lot."

Writes B: "Leave everything you prize behind.

There moths abound and thieves are most unkind."

"Boil all the water that you drink," says C.

"But why drink water anyhow," says D.

"Enter Tom's Dixie Kitchen and a glance

Will make you feel in Canada or France."

"Keep quiet and the heat will pass you by,"

Says E. Says F: "Take exercise or die."

And D. adds this, one's low morale to aid:

"Out in the Philippines," he's heard it said,

"Or any other Oriental station,

One must lose hair or teeth or reputation."

This is a sad disclosure, I declare,

I hope I do not lose my teeth or hair.

Writes H: "Buy with discretion; count the cost."

"Buy on the spot," warns J, "or all is lost."

"Let no one bleach your laundry on the soil,"

Pleads K. "Lest you and Job match boil for boil."

"Listen," says M. "There's nothing here to dread

But poundage—known as the Manila spread."

And here's a hint from little Mrs. V:

"You go out two, you're sure to come back three."

The Transport siren signals "Guests depart!"

Quick handshakes; some few tears.

"Goodbye."

"Good luck."

How swiftly pass two years.

An airplane escort skyward soared and whirled.

Corregidor—pass to an ocean world!

A glimpse of China.

Nagasaki's shore.

Smiling, we take our note-books out once more.

In full agreement we can understand

All that was written there now at first-hand;

Only one understatement we deplore—

We went out two, we are returning FOUR.



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BOOK REVIEWS

COLOSSAL BLUNDERS OF THE WAR, by William Seaver Woods. The MacMillan Co., 1930. 269 pages. \$2.50.

The fact that Mr. Woods is an experienced newspaper man might easily be gleaned from the style of this book, a style which wastes no time in searching for rhetorical effects but drives straight to the point. As editor of the *Literary Digest*, Mr. Woods has had ample opportunity to imbibe the newspaper story of the war. In addition, he has consulted original and other reliable sources and, by this procedure, has fortified his position until his statements are well-nigh unassailable.

The book's title sufficiently explains its contents; it is a recital of some of the larger, more important blunders which punctuated the course of the World War. In this recital the author is entirely impartial. Indeed, his method seems to savor of Donnybrook technique—"If you see a head, hit it!" Friend and foe alike are grist to his mill; he even mentions that unconventional march of the American 1st Division.

The author has marshalled his blunders by countries: Part I refers to the contributions of the United States; Part II refers to Germany; Part III to Great Britain and France; Part IV to Russia. Thanks to the newspaper man's nose for news, Mr. Woods has made an excellent selection of the more sensational breaks of the war and has written them into a very readable book. He not only shows how these mistakes were made but also exposes their results.

The great lesson which Mr. Woods draws from all these errors is that they wasted lives. Each blunder of the higher-ups cost human lives which should not have been lost. When he tells of the half-trained officer who tried to march his company in parade formation across a dangerous bridge he addresses every bereaved parent in the land and says, "Your boy might not have been killed in the war if *you* had made *your* Congressman give him proper leadership."

That is the note, constantly repeated, which dominates the entire book—that blunders in war are paid for in precious human lives. " * * the casualties of the men in France were double what they should have been if the officers and men had the proper training." The author comes to the logical conclusion that the only remedy, as far as the United States is concerned, is adherence to a suitable program of national defense.

It is too bad that Mr. Woods' book cannot be put into the hands of every person who lost a loved one during the war. It does no good for us, of the military, to preach the same ideas that Mr. Woods does (as we have been doing ever since there *was* an Army) for we are immediately suspected of ulterior motives. But if more good writers would unite to bring home to

every American voter the fact that unpreparedness may empty a chair in his own particular home, then America would have a program of national defense suited to her vital needs.

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GEORGE WASHINGTON, COMMANDER IN CHIEF, by Thomas G. Frothingham, Captain, U. S. R. Cloth, 405 & XII pages, with illustrations, 1930. Houghton Mifflin Company, Boston and New York. \$5.00.

The preparations for the bicentennial celebration of Washington's birth have awakened a new interest in the great life and accomplishments of our first commander in chief. It is, therefore, opportune and fitting that Captain Frothingham, a student of military affairs, has prepared this book on the military record of General Washington. Among the many biographies of our revolutionary commander in chief this work is unique, in that it is written from the military point of view, with the actual military operations as the guiding theme. The author conscientiously presents the military events in the career of Washington and thus impressively reveals to the reader a vivid and strong picture of the admirable leader and his character. The book has the Macaulay method of general annotation which readily permits the researcher to locate cited items in any of the several existing compilations of Washington's letters and papers. The book is a valuable addition to the already extensive Washington shelf and will serve to counteract the distorted and sometimes erroneous impressions made by some Washington biographers who have presented too many petty arguments and too much insignificant personal color. The reading public will enjoy the book, and military readers will find it valuable, instructive, and entertaining. Many facts, little known, even to the military reader, will be read with interest; for example, "Washington's Six Rules of War," some, if not all of which appear later in more or less the same form, in Napoleon's Maxims. The author has performed a patriotic service in his worthy effort to give an accurate, pleasing measure of Washington's truly great military genius. The reader will finish the book with a deeper appreciation of and a greater reverence for Washington.

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BEDFORD FORREST, by Captain Eric William Sheppard. Royal Tank Corps. Lincoln MacVeagh, The Dial Press, New York. 320 pages. Price \$5.00.

Bedford Forrest, dashing cavalry leader of the Confederacy, is one of the outstanding figures of the Civil War. Although largely neglected by our historians, his personality, life and actions, often thrilling, always picturesque, mark him a hero of almost epic propor-

tions. It remained for an Englishman to tell the story of this remarkable man.

Following the trend of modern biographers, Captain Sheppard's skillful pen has produced an interesting admixture of romance, historical novel, and biography. He introduces a number of fictitious characters, and creates a number of imaginary incidents to provide the necessary atmosphere for his drama. While this adds to the human interest, the wisdom of resorting to such devices is at least questionable in a serious biography. The fact that he carefully lists his fictitious characters for the information of the reader hardly exculpates him.

The author, with consummate skill, has made all his characters, real and imaginary alike, living, breathing beings of flesh and blood. The scenes he depicts pulsate with life and action. Precisely therein lies the risk that, in spite of the author's prefatory admonition, the reader will be hard put, for example, to differentiate between the fictitious Charity Dunn and the flesh-and-blood Emma Sanson. Similarly, the reader will find it difficult to determine where history ends and fiction begins. To that extent the author defeats his purpose of writing history, notwithstanding the historic authenticity of the main events of his narrative.

Captain Sheppard has written a masterful piece of work well worth the reading. He has contributed generously to a better understanding and a greater appreciation of that brilliant American soldier, Nathan Bedford Forrest.

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THE LIVES OF A BENGAL LANCER, by Major Francis Yeats-Brown, The Viking Press, New York, 1930. 299 pages. \$2.75.


A truly remarkable book, well-written, interesting, and informative. The story opens with nineteen-year-old Yates-Brown joining a native cavalry regiment, the 17th Bengal Lancers, years before the World War, and carries the reader through a polo-playing, pig-sticking, existence up to his return to England just before the World War. He becomes air observer in Mesopotamia and spends two terrible years as prisoner of war in Turkey. He returns to India and, after leaving the army, seriously studies Yoga. He tells much of Vedic philosophy and discusses in the appendix the eleventh chapter of St. John from the viewpoint of *kali-mudra* (death gesture) a self induced trance.

The book is an absorbingly interesting one for the thoughtful reader.

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THE OLD SERGEANT'S CONFERENCES, by Colonel William H. Waldron, U. S. Army. The Infantry Journal, Inc. Washington, 1930. 152 pages, \$1.50.

In this book Colonel Waldron has given a unique treatment of the subjects that he discusses. The Old Sergeant and his wards assemble on the barrack steps after supper. Here the young soldiers bring their problems for solution. The Old Sergeant discusses them freely and frankly out of the wealth of his personal experience. In simple language he points out the pitfalls that lie in the way of the soldier, the Serv-



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ice, and how he may avoid them. Many a soldier serves years in the Army before he acquires the information contained in these conferences, and some never get it.

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THE WAR METHOD AND THE PEACE METHOD, by William I. Hull, PhD., 364 pages. Fleming H. Revell Company, New York. \$2.50.

Dr. Hull is a well-known pacifist. He attempts in this volume to present a case against war and in favor of peaceful methods in the settlement of international disputes. To build up his case, he devotes the major portion of his book, 321 pages, to a sketchy outline history of the wars of mankind, and the two concluding chapters are, by way of contrast, summaries of the war method and the peace method. The soundness of his reasoning and his conclusions are as questionable as the accuracy of his version of history. The author creates the impression that mankind has indulged in warfare for the sake of war itself, that nothing was ever gained by war that could not have been attained by peaceful means. He ignores the underlying causes of the wars he enumerates and, like pacifists throughout the ages, wholly disregards human nature. But when he concludes that "all wars that were ever fought are insignificant historically," one naturally wonders why all this fuss about war.

No one can disparage his advocacy of peaceful settlement of international disputes, and there can be little doubt that with the progress of civilization, the warlike method will be less frequently employed; but when the author extols passive resistance as a virtue, he renders a disservice to the nation and institutions which he admits have made the greatest strides in the field of international amity and conciliation. The author has contributed nothing to the literature of legitimate history or the cause of peace. His book lacks the saving grace of brevity to qualify as propaganda.